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PUBLICATION OFFICE

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Department of Community Medicine, Allama Iqbal Medical College, Allama Shabbir Ahamed Usmani Road, Lahore (Pakistan). Ph: 99231453, E-mail: cmedaimc@gmail.com, drelmo@hotmail.com

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- Name of authors with highest academic degrees of each, their postal addresses, fax, phone number and mobile numbers.
- The name of the department(s) and institution(s) to which the work should be attributed.
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- Corresponding authors. The name, mailing address, telephone and fax numbers, and e-mail address of the author responsible for correspondence about the manuscript.

ABSTRACT: It should be structured, not more than 250 words, briefly mentioning under following sub- headings Objectives, Design, Place and duration of study, Methods, Results and Conclusion. Abstracts should be followed by 3-5 MeSH (Medical Subject Headings) words. Use appropriate terms to increase searchability of your study.

MANUSCRIPT FORMAT:

INTRODUCTION: Present a background for the study. Include global, regional and local reports where appropriate. Cite only strictly pertinent references. State the purpose or objective of the study without sub-headings. Explain the hypothesis and the rationale of the research. Do not include data or conclusions from the current study.

MATERIAL AND METHODS: Methodology should be written including study design, ethical review statement, description of the selection of the observational or experimental subjects, study setting, study duration, sampling method, sample size calculations with references, follow-up period, inclusion and exclusion criteria, operational definitions, variables(independent and dependent), identification of the methods and apparatus (provide the manufacturer's name and address in parenthesis) and identification of all drugs and chemicals in paragraph/s form.

The source of the study subjects should be included and clearly described. The inclusion and exclusion criteria need to be elaborated. Any equipment used in the study should give the manufacturer's name and address. Procedures should be clearly described so as to facilitate others to reproduce them easily. References are necessary for to established methods, statistical methods, for already published methods not well-known, substantially modified methods with the reasons for using them, along with their limitations. All drugs and chemicals used should be stated in generic name(s), dose(s), and route(s) of administration. State the statistical software package used along with the version. Exact p-values and 95%confidence interval (CI) limits must be mentioned instead of only stating greater or less than level of significance. State the statistical software package used along with the version.

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DISCUSSION: The discussion should begin with a summary of the main results. These are then discussed

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CONCLUSION: It should be provided under separate headings and highlight new aspects arising from the study. It should be in accordance with the objectives.

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ATTITUDES OF MEDICAL STUDENTS TOWARDS GROUP AND SELF-REGULATED LEARNING

Muhammad Shafqat, Babar Naeem
Jinnah Hospital, Lahore

ABSTRACT

Background and Objectives: In this study we are trying to assess attitudes of Medical Students towards Group and Self-regulated Learning. This study is conducted in 2nd and 4th students of various public sector Medical Colleges of Lahore, Pakistan (KEMU, FJMU, AIMC and SIMS). Data is collected from 300 subjects. Objective of study was to determine attitude and preferences of medical students towards discussion based group studies and individual self-regulated learning strategies.

Material and Methods: This is Cross sectional type of study conducted at various public sector medical colleges of Lahore including "KEMU, FJMU, AIMC and SIMS" during April – June, 2014 (03 months) with sample size of 300 patients. Consecutive non-probability sampling technique was used to recruit the patients.

Data Collection and analysis: 300 subject those fulfilling the inclusion criteria were recruited for study from medical students of various public sector medical colleges of Lahore. After approval from ethical committee and informed consent from subjects detail demographic information collected. All the information entered in a structured questionnaire. Data analyzed in SPSS Version: 17.0. Mean and standard deviation calculated for numerical variables like age, parity and gravidity. Frequency and percentages calculated for nominal variables.

Results: 79.3% respondents (234 out of 300) preferred to learn study contents by Self-learning and 22.1% respondents (66 out of 300) by Group Study.

Conclusions: Self-learning is a preferred learning strategy than group learning among medical students. Then reason found is that Self-learning is more focused, effective and less stressful. Self-learner shows better academic performance than Group-learners.

Key words: self-regulated learning, group-learning, attitude of medical student

Main objective of medical education is the development of professional skills,[1,2] in particular the readiness to engage in lifelong learning,[3,4] and to participate in inter-professional education[7] which demands an "integration of knowledge, skills and attitudes",[8] and generates the ability to collaborate with other health care professionals.[7] Beneficial teaching methods for these complex skills are "small group work and self-regulated learning, case-based approaches, and constructivist learning environments, like problem-based learning (PBL). In these approaches knowledge and skills are acquired in interactive and co-constructive processes[9-14] that demand students' motivation to engage in group learning[15], and their ability to self-regulate their learning activities.[14] However, in beginning veterinary students were found to prefer individualistic learning over group work, and teacher-directed learning over self-directed studies.[13] Due to a lack of experience, they perceived group work and self-directed learning as complicated and overcharging study conditions, or did not understand the relevance for the medical practice.[11,14] Self-regulation is essential to the learning process[7]. It can help students create better learning habits and strengthen their study skills[9], apply learning strategies to enhance academic outcomes[10], monitor their performance[15] and evaluate their academic progress[11]. Teachers thus should be familiar with the factors that influence a

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learner's ability to self-regulate and the strategies they can use to identify and promote self-regulated learning (SRL) in their classrooms. In addition to self-regulation, motivation can have a pivotal impact on students' academic outcomes[15]. Without motivation, Self-Regulated Learning is much more difficult to achieve. This study aims at assessing preferences of medical students towards discussion based group studies and individual, self-regulated learning strategies.

MATERIAL AND METHODS:

This is Cross sectional type of study conducted at various public sector medical colleges of Lahore including "KEMU, FJMU, AIMC and SIMS" during April – June, 2014 (03 months) with sample size of 300 patients. Consecutive non-probability sampling technique was used to recruit the patients.

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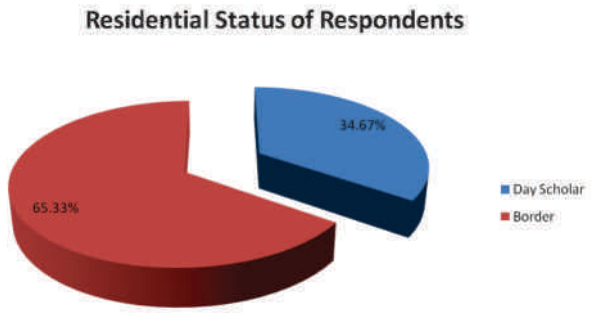
RESULTS AND MAIN FINDINGS



Graph: *Residential Status of Respondents*

Table 1: *Experience with Small Group*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	47	15.7	15.7	15.7
	Always	41	13.7	13.7	29.3
	Sometimes	212	70.7	70.7	100.0
	Total	300	100.0	100.0	

Table 2: *Experience with Self Study*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Always	259	86.3	86.3	86.3
	Sometimes	41	13.7	13.7	100.0
	Total	300	100.0	100.0	

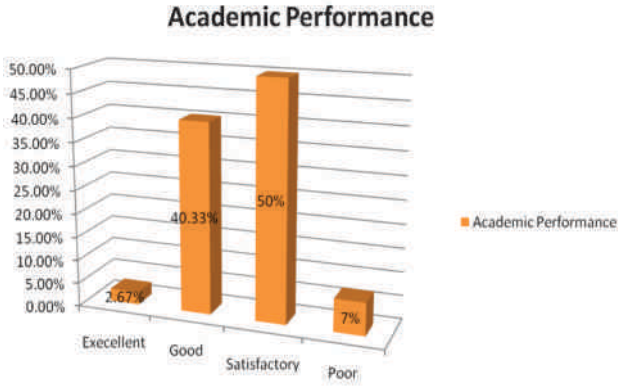


Table 3: *A Selflearning Frequencies*

		Responses		Percent of Cases
		N	Percent	
Selflearning[a]	Learn study contents by	234	21.4%	79.3%
	Effectiveness	167	15.3%	56.6%
	Stressfullness	153	14.0%	51.9%
	Motivation to learn by	136	12.5%	46.1%
	Better memory	126	11.5%	42.7%
	better understanding	167	15.3%	56.6%
	Peer's trend	108	9.9%	36.6%
Total		1091	100.0%	369.8%

a. Dichotomy group tabulated at value 2.

***Table 4:** B Group Learning Frequencies*

		Responses		Percent of Cases
		N	Percent	
Group Learning[a]	Learn study contents by	66	6.5%	22.1%
	Effectiveness	133	13.2%	44.5%
	Stressfullness	147	14.6%	49.2%
	Motivation to learn by	164	16.3%	54.8%
	Better memory	174	17.2%	58.2%
	better understanding	133	13.2%	44.5%
	Peer's trend	192	19.0%	64.2%
Total		1009	100.0%	337.5%

a. Dichotomy group tabulated at value 1.

***Table 5 (B):** Self- learning*

			class		Total
			Second year	Fourth year	
Self learning[a]	Learn study contents by	Count	114	120	234
		% within class	78.1%	80.5%	
	Effectiveness	Count	80	87	167
		% within class	54.8%	58.4%	
	Stressfulness	Count	78	75	153
		% within class	53.4%	50.3%	
	Motivation to learn by	Count	68	68	136
		% within class	46.6%	45.6%	
	Better memory	Count	59	67	126
		% within class	40.4%	45.0%	
	better understanding	Count	83	84	167
		% within class	56.8%	56.4%	
	Peer's trend	Count	54	54	108
		% within class	37.0%	36.2%	
Total		Count	146	149	295

Percentages and totals are based on respondents.

a. Dichotomy group tabulated at value 2.

***Table 5 (A):** Group-Learning class Cross tabulation*

			class		Total
			Second year	Fourth year	
Group Learning[a]	Learn study contents by	Count	36	30	66
		% within class	24.2%	20.0%	
	Effectiveness	Count	70	63	133
		% within class	47.0%	42.0%	
	Stressfulness	Count	72	75	147
		% within class	48.3%	50.0%	
	Motivation to learn by	Count	82	82	164
		% within class	55.0%	54.7%	
	Better memory	Count	91	83	174
		% within class	61.1%	55.3%	
	better understanding	Count	67	66	133
		% within class	45.0%	44.0%	
	Peer's trend	Count	96	96	192
		% within class	64.4%	64.0%	
Total		Count	149	150	299

Percentages and totals are based on respondents.

a. Dichotomy group tabulated at value 1.

***Table 6 (A):** Group Learning –Gender*

			gender		Total
			male	female	
Group Learning[a]	Learn study contents by	Count	31	35	66
		% within gender	23.7%	20.8%	
	Effectiveness	Count	71	62	133
		% within gender	54.2%	36.9%	
	Stressfulness	Count	67	80	147
		% within gender	51.1%	47.6%	
	Motivation to learn by	Count	61	103	164
		% within gender	46.6%	61.3%	
	Better memory	Count	68	106	174
		% within gender	51.9%	63.1%	
	better understanding	Count	54	79	133
		% within gender	41.2%	47.0%	
	Peer's trend	Count	90	102	192
		% within gender	68.7%	60.7%	
Total		Count	131	168	299

Percentages and totals are based on respondents.

a. Dichotomy group tabulated at value 1.

Table 6 (B): *Self Learning Gender*

			gender		
			male	female	Total
$Self-learning	Learn study contents by	Count	101	133	234
		% within gender	78.3%	80.1%	
	Effectiveness	Count	61	106	167
		% within gender	47.3%	63.9%	
	Stressfulness	Count	65	88	153
		% within gender	50.4%	53.0%	
	Motivation to learn by	Count	71	65	136
		% within gender	55.0%	39.2%	
	Better memory	Count	64	62	126
		% within gender	49.6%	37.3%	
	better understanding	Count	78	89	167
		% within gender	60.5%	53.6%	
	Peer's trend	Count	42	66	108
		% within gender	32.6%	39.8%	
Total		Count	129	166	295

Percentages and totals are based on respondents.

a. Dichotomy group tabulated at value 2.

Table 7: *Academic performance*

		Learn study contents by		
		Group Learning	Self regulated learning	Total
academic performance	Excellent	1	7	8
	Good	26	95	121
	satisfactory	37	113	150
	poor	2	19	21
Total		66(22%)	234(78%)	300

RESULTS:

In our analysis, 55.33% (166 out of 300) respondents were in age group of 21-25 years. 44.67% (134 out of 300) subjects were in 15-20 years. 56% (168 out of 300) Subjects were Female and 44% (132 out of 300) were MALE. 50% (150 out 300) were from 4th year and 50% (150 out of 300) were from 2nd year. 65.33% (196 out of 300) were Borders and 34.67 (104 out of 300) were day scholars. 70.7 % (212 out of 300) subjects were used to study in groups sometimes; 15.7% (47 out of 300) had never experienced Group Learning; 13.7% (41 out of 300) were always group learners. (Table No.1) 86.3% (259 out of 300) were always Self-Learners; 13.7% (41 out of 300) were sometimes Self-Learners. {Table No.2} 80% (240 out of 300) never appeared in any supplementary exam and 20% (60 out of 300) were supply Holder. 50% (150 out of 300) showed satisfactory performance, 40.33% (121 out of 300) showed Good academic performance, 7%(21 out of 300) poor and 2.67%(8 out of 300) excellent academic performance.

79.3% (234 out of 300) preferred to learn study contents by Self-learning and 22.1% (66 out of 300) by Group Study; 56.6%(167 out of 300) considered self-learning(SL) Effective and 44.5%(133 out of 300) group learning(GL); 51.9%(153 out of 300) considered SL and 49.2% (147 out of 300) GL stressful. 46.1% (136 out of 300) and 54.8%(164 out of 300) felt motivated by SL and GL respectively; 42.7% (126 out of 300) and 58.2%(174 out of 300) recalled better by SL and GL respectively. 56.6% (167 out of 300) got better understanding by SL and 44.5% (133 out of 300) by GL; 36.6% (109 out of 300) subject's peers were SL and 64.2%(192 out of 300) GL.

24.3% of the 2nd year students preferred Group learning for their studies and the Rest Self Learning; 20% students of 4th year were inclined to study by group learning while 80% were Self – Learners. (Table No. 4 a & b). 23.3% of the age group 15-20 years were group learners while 76.7% were self-learners; On the other hand 21.1% of the age group 21-25 were group-learner and 78.9% were self-learners. (Table No. 5 a & b). 23.7% of the males and 20.8% of females were group learners whereas 76.3% of males and 79.2% of females preferred self-learning. (Table No. 6 a & b)

DISCUSSION:

The Topic of our study was to find out attitude of medical students of 4th year and 2nd year of AIMC towards discussion based group study and individual self-study and to determine the reasons for such attitudes. 300 students were included in our study including both males and females of different age groups. The results showed that majority (78%) of the students were purely self-learners while only 22% were purely group learner. Among both these groups some students had experienced both group learning and self-learning occasionally. Of the students, whose attitude was group learning, 13.2% adopted this because it was more effective than SL, and 14.6% adopted this because SL was stressful. 16.3% got motivated by GL, 17.2% because it improved their memory, 13.2% because of better understanding. Of the self - learners 15.3%

considered it effective, 12.5% got motivated, 11% improved memory and 15.3% had better understanding.

Regarding academic performance 39 % (26 out of 66) group learners had good, 1.5% excellent, 56% satisfactory and only 3% had poor academic performance. On the other hand 40% of the self learner had good, 3% excellent , 48% satisfactory and 8% had poor performance. A Similar research was conducted at conducted at Linkoping University, Sweden by Antje Lumma-Sellenthin. The results showed that 61% of the students were Group-learners and 29% were self-learners. 78% of the group learners were Males and 22% were females. While majority of the self-learners were females (69%). The ones who were group learners, majority adopted this because of better understanding (21.8%) & better memory (15.4%) of the contents. While the rest adopted this because self-learning was stressful (16%).

Similarly of the students who preferred self-learning, majority thought that GL was stressful (35%), while others were self-learners because it improved their memory(23%), They better understood the contents (20%). And the rest because of miscellaneous causes.

So in contrast to the study mentioned above, the majority of the respondents of our research were self-learners, and this was due to deep understanding, better memory and less stress.

CONCLUSION:

- Self-learning is a preferred learning strategy than group learning among medical students. Then reason found is that Self-learning is more focused, effective and less stressful.
- Self-learner shows better academic performance than Group-learners.

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FREQUENCY OF THE PSYCHIATRIC PATIENTS SEEKING SPIRITUAL HEALTH PRACTICES PRIOR TO THEIR TREATMENT FROM LICENSED PSYCHIATRISTS

Aneeqa Shamshad Butt, Arooj Mirza, Ashraf Ch. Mamoon Akbar Qureshi, Ambreen Rohi, Adil Atta Cheema, Aghosh e Gul Ch., Amna Amin, Ahmad Mustafa

ABSTRACT

Background: Mental disorders and their associated psychosocial disabilities are a source of considerable morbidity and impose a significant drain on national resources. Results from the WHO World Mental Health Consortium demonstrate that common mental disorders are highly prevalent in both the developed and the developing world. Only a limited proportion of patients with psychiatric disorders attend the healthcare facilities, and that too when the condition becomes severe. Treatment from unqualified medical practitioners and faith healers is a common practice, and is attributable to the delay in proper treatment.

Objective: To find the frequency of the psychiatric patients seeking spiritual health practices prior to their treatment from psychiatrists.

Material and Method

Study Design: Cross sectional study

Study Setting: Psychiatry OPD Jinnah Hospital Lahore.

Study Duration: 3 months

Inclusion Criteria: 14 – 70 years of age, both genders seeking psychiatric opinion for first time

Results: . Mean age of subjects were 31 years (SD + 15.02), 53.0 % were females and 47.0 % were males,. that 40.0 % of the subjects symptoms were recognized more than 2 years later. 60.0 % were the patients relatives who first recognized this problem, 36.0 % of subjects themselves recognized their problem and sought for treatment. 42.4% consultations were from GP, 19.9% from Pir, 12.0% from Religious Clerics and 10.5% from Hakim, Fakir and Malang accounted for 5.7 % and only 2.6 % consultant were taken from psychotherapist.

Conclusions: There is a delay in recognition of psychiatric illness in our setting. Faith healers consultations are significantly sought in our community

Key words: health seeking practices, mental illness,

Mental disorders and their associated psychosocial disabilities are a source of considerable morbidity and impose a significant drain on national resources. Results from the WHO World Mental Health Consortium demonstrate that common mental disorders are highly prevalent in both the developed and the developing world. The majority of the world's 450 million people who suffer from psychiatric morbidity live in developing countries, and less than 10% have access to mental health care.[1]

Traditional healing practices continue to be used widely all over world especially in Africa and south Asia Spiritual healing has got a pivot role as far as mental health is concerned, because faith healers are usually the first contact in event of sickness. A common experience of sufi mystic and psychiatrist practicing psychotherapy is a balance between inner and outer life. The dawn of new century has been a significant increase in realization in West that spiritual factors are in integral part of health and well-being. It is important for mental health care professionals to be aware and sensitive to spiritual dimension of mental health.[2] A recent study assessing the implication of psychiatric phiralism for WHO search on mental health disorder examined

patients in three forms of therapy for mental illness in south India ayurvedric, allopathic and religious healing.[3] The bulk of epidemiological research in Uganda has focused on primary care settings, where most psychiatric disorders are non-psychotic[4,5]. The reported prevalence rates vary widely, from 10% to nearly half of all primary care attendees (the quoted figures range from 10–25% of patients attending with a psychiatric problem, with or without a co-existing physical problem). The most common diagnoses are Depression and Anxiety[6–8]. A community study from rural Uganda by Orley and Wing found the following prevalences: Depression 9.3%, Anxiety 8.5%, Bipolar disorder 4.9% and Schizophrenia 1.5 %[9]. In a study of households in the Kabarole district of Uganda, Kasoro and others found that 30.7% of adults had psychiatric disorders[10]. On the basis of the UNHS 2005/2006 Qualitative Module Report, the Uganda Bureau of Statistics found, for example, that 58% of all the households with disabled members (an estimated 7% of all households in Uganda), had at least one member with a mental disorder[11]. None of these Ugandan studies specifically addressed traditional healers' practices, neither did they highlight severe psychiatric illnesses (Psychosis). Instead, they concentrated on common mental disorders. Furthermore, it is possible that many patients with psychosis do not spontaneously seek primary health care[12]. Thus, there is a paucity of literature on the prevalence of mental health care provided by traditional healer centers/shrines in Uganda. However, a study in urban Tanzania found that among persons attending a traditional healer centre in Dar-Es-Salaam, the capital, the prevalence of common mental disorders was 48%, which was twice the prevalence among persons attending the neighboring primary health clinic[13]. Patel and others found a prevalence of 40 % in Harare[14]. None of the studies reported on the severity of disorders among person attending traditional healer's shrines.

The rationale of our study is as large numbers of people are firm believers of spiritual healing so they frequently visit their spiritual healers for relief of their psychiatric disorders and thus delay in treatment. Study will reveal current trend and practices of health seeking behavior of patient suffering from psychiatric illness.

LITRATURE REVIEW

The term mental illness is generally referred to mental health problems in adults.[15] Significant disease load is attributed to mental illnesses globally and talking in terms of DALY (disability adjusted life years) a more reliable indicator, more than two fifth of total disabilities are due to mental illness.[16] Out of the top ten leading causes of disabilities throughout the world, five are psychiatric illnesses.[17] According to WHO, mental illnesses are responsible for 11.5% of the global burden of diseases, a figure that is projected to increase to 15% by 2020. Worldwide, 340 million people suffer from depressive illnesses with majority living in the developing world.[5] In Pakistan according to a rough estimate one million are severely mentally ill and ten millions are mildly ill.[4] Besides such a big disease load in Pakistan the approach for health of general population multiplies the problem. A number of studies have shown that many people attribute depression (which is a major psychiatric problem) to evil influences. Many parents belief in Jin, magic and evil eye for the mental illness of their child.[18,19] A few studies revealed that majority of people first approach, a shaman for seeking cure from mental illnesses.[7,8] Studies have also shown that majority of the patients, who attend the spiritual healers are either uneducated or just had primary education.[20,21] As the health seeking behaviour plays a pivotal role in the outcome of any disease, this study was conducted to asses the health seeking behaviour of our population so that steps could be taken for better provision of health facilities along with disease management and control.[22]

The concept of spirituality is inclusive and affects everybody. It overlaps with that of religion, but unlike spirituality, religion is potentially divisive

and adopted only by some. By permitting consideration of 'secular' spiritual activities and short-circuiting destructive arguments about beliefs, a valuable perspective can be applied to the whole field of mental health care. [23]

Comprehensive research evidence 2 shows that religious and spiritual beliefs and practices help prevent many physical and mental illnesses, reducing both symptom severity and relapse rate, speeding up and enhancing recovery, as well as rendering distress and disability easier to endure. Especially important is that religious and spiritual factors can significantly affect the presentation of mental disorder. Furthermore, psychiatric patients have consistently identified spiritual needs as an important issue, and spiritual care as contributing to symptom relief and general well-being. It follows that psychiatric care should routinely include a careful and sympathetic assessment or 'spiritual screening. [24]

Mental and behavioral disorders are present at any point in time in about 10% of the adult population worldwide. The burden of mental disorders is maximal in young adults, the most productive section of the population. Neuropsychiatry conditions together account for 10.96% of the global burden of disease as measured by disability-adjusted life years (DALYs). Projections estimate that by the year 2020, neuropsychiatric conditions will account for 15% of disabilities worldwide, with unipolar depression alone accounting for 5.7% of DALYs and will stand second in top 10 leading causes of disability.[25]

The total economic costs of mental disorders are substantial in terms of gross national product (GNP) loss. In most countries, families bear a significant proportion of these economic costs because of the absence of public funded comprehensive mental health service networks. Families also incur social costs, such as the emotional burden of looking after disabled family members, diminished quality of life for carers, social exclusion, stigmatization, and loss of future opportunities for self-improvement.[26]

This burden emphasizes the need of scientific studies in various aspects of mental disorders. Access to adequate mental health care always falls short of both implicit and explicit needs. This can be explained in part by the fact that mental illness is still not well understood, often ignored, and considered a taboo. The mentally ill, their families and relatives, as well as professionals providing specialized care, are still the object of marked stigmatization. These attitudes are deeply rooted in society. The concept of mental illness is often associated with fear of potential threat of patients with such illnesses. Fear, adverse attitude, and ignorance of mental illness can result in an insufficient focus on a patient's physical health needs. The belief that mental illness is incurable or self-inflicted can also be damaging, leading to patients not being referred for appropriate mental health care.[27]

Many factors contribute to such underutilization of services. The attitude of individual patient toward his or her mental disorders is important as far as health seeking is concerned. Adverse attitude toward psychiatry and psychiatrists has been observed among medical professionals, which could be another hindrance in providing adequate mental health services. It is pertinent to study the perceptions, myths, beliefs, and health-seeking behavior for mental health of population.[28] An understanding of the way people seek care for mental disorders is important to know for planning mental health services, provision of appropriate training to the health care providers, and mental health reforms. Reasons for choosing a particular service help in understanding how the population perceive mental illnesses and respond to them. This knowledge can be helpful in developing community awareness programs so as to remove myths and misconceptions about mental illnesses and sensitize the people with the availability of various sources of help available in the community.[30]

OBJECTIVES:

- To find the frequency of the psychiatric patients seeking spiritual health practices prior to their treatment from licensed psychiatrists.

OPERATIONAL DEFINITION:

Health seeking practices from spiritual healers:

Patients who seek diverse traditional healing methods like taweez, dum, darood, sorcery(kal jadu) from spiritual healers like;Peer, Fakeer , Malang and Religious Clerics

Psychiatric Illness:

The patients suffering from following mental disorders seeking psychiatric opinion will be included in our study: Personality disorders, Schizophrenia, Anxiety, panic disorders and depressive disorders.

MATERIAL AND METHODS

Study design: Cross sectional descriptive study

Study setting: Psychiatric OPD JHL

Study duration: 3 months

Sample size:

Sample size calculated from win pepi ver: 11.15

To estimate a proportion

Confidence level = 95%

Acceptable difference = 0.10

Assumed proportion = 0.48

REQUIRED SAMPLE SIZE = 96 we will take 100 patients.

Sample technique: Purposive sampling.

Sample selection:

Inclusion criteria

- Age 14 – 70 years
- Either gender
- Patients seeking psychiatric opinion for first time.

Exclusion criteria:

- Referred cases
- Patients with organic illness having psychiatric symptoms.

Data Collection tool and procedure:

A structured questionnaire was designed containing information regarding health seeking practices of psychiatric patients. It had two parts, the first part comprised of sociodemographic information of patients and respondents and the second part comprised of health seeking practices especially the spiritual healing practices. (See annex II)

100 subjects those fulfilling the inclusion criteria were included in our study. After an informed consent detailed demographic information was collected from patients and or attendants. The dependent variable, health seeking practices were asked from respondents with regards to spiritual healers.

Data analysis procedure:

Data was entered and analyzed in SPSS ver: 17.0. Mean and standard deviation was calculated for numerical variable like age. Frequency and percentage will be calculated for qualitative variables like diagnosis, gender distribution, faith healers visits and reason for faith healer visits.

RESULTS AND MAIN FINDINGS:

Sociodemographic Characteristics:

100 subjects with mental disorder who visited the psychiatry OPD along with their respondents were interviewed. Mean age of subjects were 31 years SD + 15.02, median age 27 and mode 18. Minimum ages of subjects were 10 years and maximum ages of subjects were 80 years.(Table no:1& 2). 53.0 % were females and 47.0 % were males. (Graph no:2).

When asked about education of subjects it was found that 28.0 % of subjects were illiterate, 21% had attended primary school and 14.0 % had attended secondary school. Among the respondents 36.0 % were illiterate, 21.0 % had attended primary school and 10.0% attended secondary school. (Table no: 3).

Regarding the occupational status of the subject it was found that 26.0 % were housewifes,22.0 % were students and 20.0 % were farmers. Among the

respondent 35.0 % were students,19.0 % were farmers/laborers and 18.0 % were govt. employee / pvt. (Table no:4). 6.0 7% of subjects lived in urban areas and 33.0 % lived in rural areas. (Graph no:2) Relationship of accompanying person were assessed

Table 1: *Age of subjects*

Mean	31.1700
Median	27.0000
Mode	18.00
Std. Deviation	15.20171
Minimum	10.00
Maximum	80.00

Table 2: *Age of Respondents*

Age of Respondents	Frequency	Percent
10 - 30 years	60	60.0
31 - 60 years	32	32.0
60 years and above	8	8.0
Total	100	100.0

and it was found out that that 42.0 % were parents of

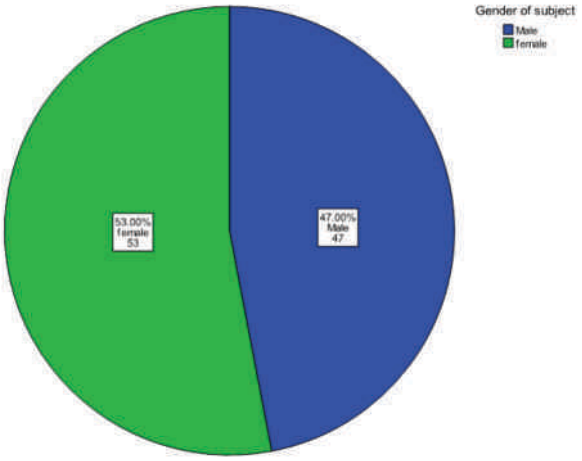


Table 3: *Educational status of subjects and Respondents*

Education status	Education status of subject		Education status of respondent	
	Frequency	Percent	Frequency	Percent
Illiterate	28	28.0	36	36.0
Primary	12	12.0	7	7.0
Middle	14	14.0	11	11.0
Matric	21	21.0	21	21.0
F.A / F. Sc	14	14.0	10	10.0
Bachelors & above	11	11.0	11	11.0
masters n above	0	0.0	4	4.0
Total	100	100.0	100	100.0

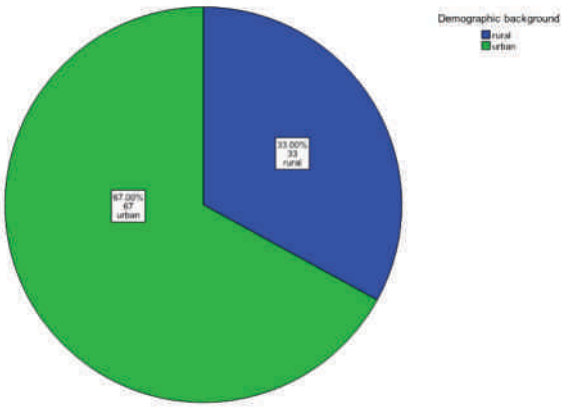
Table 4: *Occupational status of subjects and Respondents*

Occupation	Occupation of subject		Occupation of respondent	
	Frequency	Percent	Frequency	Percent
Unemployed	15	15.0	12	12.0
Farmer / Laborer	20	20.0	19	19.0
Business	8	8.0	12	12.0
Employee Govt. / Pvt.	9	9.0	18	18.0
Student	22	22.0	35	35.0
Housewife	26	26.0	4	4.0
Total	100	100.0	100	100.0

Table 5: *Relation of respondents with subject*

Relation of respondents with subject	Frequency	Percent
Self	4	4.0
Parents	42	42.0
Spouse	10	10.0
Siblings	19	19.0
Relatives	22	22.0
Friends	3	3.0
Total	100	100.0

subjects, 22.0 % were relatives,19.0 % were siblings



and 10.0 % were spouse were brought the subjects in OPD. (Table no: 5).

Graph no: 1 *Gender of Subjects*

Graph no: 2 *Demographic background of subjects:*

Health seeking practices

The problem first recognized when and by whom was analyzed and it was found that 40.0 % of the subjects symptoms were recognized more than 2 years later, 19.0% of subjects symptoms were recognized wit in 1-2 years. 40.0 % of subject's symptoms where recognized in more than 2 years,

19.0 % of subjects recognized symptoms within 1- 2 years. 66.0 % of subjects took psychiatric consultation in < 6months, 13.0 % of subjects took psychiatric consultation between 6 months to 2 years and 21.0 % of subjects took psychiatric consultation for first time after two years (Table no:6).

Regarding problem recognized first by whom and who convinced from treatment. 60.0 % were the patients relatives who first recognized this problem, 36.0 % of subjects themselves recognized their problem and sought for treatment. 4.0 % subject's friend first recognized the symptoms. 68.0 % subjects were convinced for treatment by their relatives, 21.0 % themselves opted for treatment and 11.0 % by their friends. (Table no:7).

Consultation taken by respondents for subjects was also asked and it was found that 42.4% consultations were from GP, 19.9% from Pir, 12.0% from Religious Clerics and 10.5% from Hakim, Fakir and Malang accounted for 5.7 % and only 2.6 % consultant were taken from psychotherapist. When asked about the mode of treatment from the respondents, it was found that 44.4% of the subjects used drugs, 29.3% dam,23.6% tweeze and 3.1% used exorcism / violence as a treatment modality. (Table no:8 & 9).

The frequency of consultation was that 48.0 % received consultation 1-3 times, 37.0 % more than 6 times and 15.0 % 4-6 times. (Table no:10). When asked about their opinion for satisfaction about different treatment

Table 6: *Problem first recognized and Psychiatric consultations taken for first time:*

Duration	Problem first recognized		Psychiatric consultation taken for first time	
	Frequency	Percent	Frequency	Percent
< 6 months	30	30.0	66	66.0
6- 1 year	11	11.0	6	6.0
1- 2 years	19	19.0	7	7.0
> 2 years	40	40.0	21	21.0
Total	100	100.0	100	100.0

Table 7: *Problem recognized first by whom and who convinced for treatment*

Relation of respondents with subject	Problem recognized first by whom		Who convinced for treatment	
	Frequency	Percent	Frequency	Percent
Self	36	36.0	21	21.0
Relative	60	60.0	68	68.0
Friend	4	4.0	11	11.0
Total	100	100.0	100	100.0

Table 8: *Frequencies of Consultation taken from different modalities*

		Responses		Percent of Cases
		N	Percent	
Consultation taken from	GP	81	42.4%	81.0%
	Homeopath	13	6.8%	13.0%
	Hakim	20	10.5%	20.0%
	Pir	38	19.9%	38.0%
	Religious Clerics	23	12.0%	23.0%
	Fakir	9	4.7%	9.0%
	Psychotherapist	5	2.6%	5.0%
	Malang	2	1.0%	2.0%
Total		191	100.0%	191.0%

Table 9: *Mode of treatment*

		Responses		Percent of Cases
		N	Percent	
Mode of treatment	Drugs	84	44.0%	84.8%
	Tweeze	45	23.6%	45.5%
	Dam	56	29.3%	56.6%
	Exorcism / Voilence	6	3.1%	6.1%
Total		191	100.0%	192.9%

Table 10: *How many times consultation received*

How many times consultation received	Frequency	Percent
1- 3 times	48	48.0
4 - 6 times	15	15.0
> 6	37	37.0
Total	100	100.0

Table 11: *Satisfaction about treatment Frequencies*

		Satisfied Responses		Percent of Cases
		N	Percent	
Satisfaction about treatment	Drug	67	54.9%	83.8%
	Taweez	22	18.0%	27.5%
	Dum	31	25.4%	38.8%
	Exorcism / Violence	2	1.6%	2.5%
Total		122	100.0%	152.5%

a. Dichotomy group tabulated at value 1.

modalities, it was found that 54.9% were satisfied from drugs, 25.4% from dam, 18.0 % from tweeze and 1.6% from exorcism/ Violence. (Table no:11).

DISCUSSION:

Only a limited proportion of patients with psychiatric disorders attend the healthcare facilities, and that too when the condition becomes severe. Treatment from unqualified medical practitioners and faith healers is a common practice, and is attributable to the delay in proper treatment. Mental illnesses are commonly linked with a higher disability and burden of disease, than many physical illnesses. The World Health Organization noted that one in every four people are affected by a mental disorder at some stage of life. [31] Six neuropsychiatry conditions, unipolar depressive disorders, alcohol use disorders, schizophrenia, bipolar affective disorder, Alzheimer's, and other dementias, as also migraine, have figured in the top 20 causes of disability in the world.[32] It is estimated that at any point in time, in India, 2–5% of the population is suffering from serious mental illnesses, while another 10% of the population is suffering with minor mental illnesses.[33] In India, there are a very small number of qualified psychiatrists, mostly concentrated in the metropolitan and the urban areas, to deal with this huge problem, further compounding the issue.[34] Furthermore, it is a general observation in India and Pakistan that a majority of patients with mental disorder never seek professional help; and most of them utilize the help of unqualified medical practitioners, faith healers, and so on. The non-availability of mental health services, penury, stigma, and superstitions associated with mental disorders, coupled with the unwillingness or inability of families to care for their mentally ill relatives, appear to be the main contributory factors.[35] The widely prevalent magico-religious beliefs associated with mental illness and lower literacy, especially in rural areas, poses significant social obstacles in seeking appropriate health care for psychiatric patients.[34-35]

In a cross sectional survey seeking gender education and health seeking behavior for mental illness in 5 districts of Karachi. The criterion used to assess the mental illness was William C Menninger criteria, showed education had a significant association with the health seeking behaviour ($p<0.05$) as more graduates were consulting the psychiatrists as compare to non-graduates and no significant difference was found in the health seeking behavior of males and females ($p>0.05$).36 In our study 53.0 % were females and 47.0 % were males and 28.0 % of subjects were illiterate, 21% had attended primary school and 14.0 % had attended secondary school. Among the respondents 36.0 % were illiterate, 21.0 % had attended primary school and 10.0% attended secondary school.

Investigating and understanding family member's causal beliefs and attitudes about psychiatric illness is an important step in the management of the illness. They likely influence the family's help-seeking decisions and affect both adherence with biomedical interventions and social integration of the patients.

In another study done by Bouhlel found out that mean age of the relatives was 49.8 (±13.7) years; 54.9% were men; 49.4% were parents, 8.8% spouses, 39.6% brothers or sisters; 25.3% had not attended school, 24.2% had attended primary school, 37.4% junior high school or high school and 13.2% had a university degree; 63.7% lived in an urban area; 33% had low economic status and 41.8% reported having another family member with mental disorder. . Mean age of subjects were 31 years SD + 15.02, median age 27 and mode 18. Minimum ages of subjects were 10 years and maximum ages of subjects were 80 years.(Table no:1& 2). 53.0 % were females and 47.0 % were males. (Graph no:2).

When asked about education of subjects it was found that 28.0 % of subjects were illiterate,21% had attended primary school and 14.0 % had attended secondary school. Among the respondents 36.0 % were illiterate, 21.0 % had attended primary school and 10.0% attended secondary school. Regarding

the occupational status of the subject it was found that 26.0 % were housewifes, 22.0% were students and 20.0 % were farmers. Among the respondent 35.0 % were students,19.0 % were farmers/laborers and 18.0 % were govt. employee / pvt. (Table no:4). 6.0 7% of subjects lived in urban areas and 33.0 % lived in rural areas. (Graph no:2)

Also in study done by Bouhelel Only 46.2% of participants had asked psychiatrists about the diagnosis of their sick relatives and only 16.5% were able to label the term "schizophrenia". Among the cited etiologies of schizophrenia, religious causes were found in 76.9% of cases, they first cited God's will or fate and secondly God's punishment. Magical explanations such as witchcraft and possession by "djinns" were found in 47.3% of cases. The biological causes were cited by 59.3% of participants. The majority of participants (95.6%) proved the need for drugs and 81.3% the utility of psychotherapies. However, 30.8% believed in non-medical practices such as reading Holy Koran verses, charity and exorcism. In our study Relationship of accompanying person were assessed and it was found out that that 42.0 % were parents of subjects, 22.0 % were relatives,19.0 % were siblings and 10.0 % were spouse were brought the subjects in OPD. Problem recognized first by whom and who convinced from treatment. 60.0 % were the patients relatives who first recognized this problem, 36.0 % of subjects themselves recognized their problem and sought for treatment. 4.0 % subject's friend first recognized the symptoms. 68.0 % subjects were convinced for treatment by their relatives, 21.0 % themselves opted for treatment and 11.0 % by their friends.

In a nationwide home survey on the identification of possible factors affecting help-seeking behaviour for psychiatric reasons and the prevalence of related psychosocial problems was carried out in a sample of 3754 adults in Greece. Of the total of 570 respondents who reported at the personal interview that they had a serious mental health problem, only 40.8% reported that they had attended a physician or a psychiatrist. A significant proportion of this population (42.5%) had sought the help of a physician. In our study Consultation taken by respondents for subjects was also asked and it was found that 42.4% consultations were from GP, 19.9% from Pir, 12.0% from Religious Clerk and 10.5% from Hakim, Fakir and Malang accounted for 5.7 % and only 2.6 % consultant were taken from psychotherapist. When asked about the mode of treatment from the respondents, it was found that 44.4% of the subjects used drugs, 29.3% dam, 23.6% tweeze and 3.1% used exorcism / violence as a treatment modality.

In another cross-sectional study carried out with a sample of 436 subjects (360 subjects from urban and rural communities of Delhi and 76 medical professionals working in different organizations in Delhi). The mental disorders were thought to be because of loss of semen or vaginal secretion (33.9% rural, 8.6% urban, 1.3% professionals), less sexual desire (23.7% rural, 18% urban), excessive masturbation (15.3% rural, 9.8% urban), God's punishment for their past sins (39.6% rural, 20.7% urban, 5.2% professionals), and polluted air (51.5% rural, 11.5% urban, 5.2% professionals). The study concluded from this study that the myths and misconceptions are significantly more prevalent in rural areas than in urban areas and among medical professionals, and the people need to be communicated to change their behavior and develop a positive attitude toward mental disorders so that health-seeking behavior can improve. In our study Consultation taken by respondents for subjects was also asked and it was found that 42.4% consultations were from GP, 19.9% from Pir, 12.0% from Religious Clerics and 10.5% from Hakim, Fakir and Malang accounted for 5.7 % and only 2.6 % consultant were taken from psychotherapist. When asked about the mode of treatment from the respondents, it was found that 44.4% of the subjects used drugs,29.3% dam,23.6% tweeze and 3.1% used exorcism / violence as a treatment modality.

CONCLUSION:

The conclusion of our study is:

- There is a delay in recognition of psychiatric illness in our setting.
- Parents seem to be more concerned about taking treatment from psychiatric facility.
- Faith healers consultations are significantly sought in our community
- Satisfaction level regarding allopathic treatment is more than spiritual healing practices.

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HYDROFIBER DRESSING WITH SILVER ON DIABETIC FOOT ULCER; A RELIABLE DRESSING

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ABSTRACT

The use of recently formulated Hydrofiber dressing with ionic silver(Ag) like Aquacel Ag dressing is increasing for various wound care. Hydrofiber Ag dressing is a moister retaining dressing, composed of carboxymethylcellulose with 1.2% ionic Ag. We describe our experience of Hydrofiber Ag dressing on chronic non-healing diabetic foot ulcer with nonspecific infection.

STUDY DESIGN; Clinical trial

PLACE AND DURATION OF STUDY; Surgical department, Azra Naheed Medical College from Feb 2012 –Dec 2012

METHODOLOGY; A total of 20 patients with diabetic foot ulcer were selected for study. Patients with severe vascular insufficiency, sepsis, gangrene and chronic osteomyelitis were not included.

RESULTS; The effect of Hydrofiber Ag dressing was observed as promotiom of healthy granulation tissue, decrease in bioburden, epithelialization,and complete healing occurred in 3-6 months with good patient compliance and no serious side effects.

CONCLUSION; Hydrofiber Ag dressing is simple, safe dressing for chronic wound with reliable results.

KEY WORDS; Hydrofiber dressing ,Ionic Ag, chronic wound

The search for ideal wound dressing is on going and use of Hydrofiber[4,5] dressing impregnated with ionic silver(Ag) is increasing for various wounds care.Diabetic foot ulcers (,DFU) are chronic ,non-healing complications of diabetes that leads to high hospital costs and in extreme cases to amputation. Diabetic neuropathy, peripheral vascular disease, infection and abnormal cellular and cytokine/ chemokine activity are the main factors that hinder diabetic wound repair. DFU represent a current and important challenge in the development of novel and efficient wound dressing. In general, an ideal wound dressing should provide a moist wound environment, offer protection from secondary infection, remove wound exudate and promote tissue regeneration. However no existing dressing fulfills all the requirements associated with DFU treatment and the choice of correct dressing depend upon the wound type, stage, patient condition and the tissue involved. Currently there are different types of commercially available wound dressings which differ in their application, modes[1,2,3] of action, materials and methods of production., This study highlights the most recent advances in the development of Hydrofiber wound dressing with ionic Ag like Aquacel Ag dressing for DFU care.

METHODS:

Total 20 patients with diabetic foot ulcer are selected for use of Hydrofiber Ag dressing. All diabetic foot wounds are examined and assessed completely, and wound culture, x-rays, Doppler study are done routinely, so diabetic foot wounds with chronic osteomyelitis, gangrene, septicemia, severe vascular insufficiency are excluded from this study. Out of 20 patients of diabetic foot ulcer, 5 patients have proved MRSA from wound culture.[15] patients(75%) have mixed infections including pseudomonas. All 20 patients had superficial debridement when needed and used Hydrofiber Ag dressing without systemic antibiotics.

Technique; After aseptic measures, superficial

debridement of DFU is usually done to remove loose necrotic tissue and surrounding callus, make wound dry and apply Hydrofibr Ag dressing according to the size of ulcer on which any secondary dressing usually Tegderm is done, initially dressing is changed after 2-3 days for two weeks and then weekly, blood sugar strictly controlled, anaemia corrected. Improve nutrition and personal hygiene. All patients have regular follow up in surgical outdoor.

RESULTS:

A total of 20 patients with diabetic foot ulcer including 5 patients (25%) with documented MRSA were included in this clinical trial. superficial debridement was done when needed. systmic antibiotics were not used. The effect of Hydrofiber Ag dressing was observed in terms of healthy granulation tissue, decrease of bioburden, epithelialization and complete healing in 3-6 months. No advrse effects were found in 20 patients.

DISCUSSION:

Silver(Ag)[6,7]) has been used for many years in chronic wounds to treat local infection. Ag has been presented as metallic, salt ($AgNO_3$) crystal, solution and cream(silver sulfadiazine[14]). Ionic Ag which is oxidized active state of silver, has received special interest and research for use as a prophylactic antimicrobial agent[6,7,12] in various wound dressings due to its broadspectrum antibacterial activity[10,11] and no evidence of emerging resistance to Ag[15]. DFU represent a current and important challenge in the development of novel and efficient wound dressing. In general, an ideal dressing should provide a moist wound environment, offer protection from secondary infection, remove wound exudate and promote tissue regeneration. However no existing dressing fulfills all the requirements and choice of correct dressing depends upon wound type, stage, patient condition. Currently there are different types of commercially available wound dressings which differ in application, mode of action and materials. Dressing materials can include natural, modified and synthetic polymers as well as combined processed in the form of films, foams, hydrocolloids and Hydrogels. Moreover wound dressing may be employed as medicated systems with healing enhancing substances[10] egdrugs, growth factors, peptides and stem cells. This study represent the recent advances in the development of wound dressings and a relatively simple, economical and most effective dressing for diabetic foot wound with infection including documented MRSA without use of systemic antibiotics. Hydrofiber Ag dressing is a soft, sterile, non woven flat sheet or ribben composed of sodium-carboxymethyl cellulose and 1.2% ionic Ag. It has a unique multi-targetted modes of action[6] and broadspectrum antimicrobial activity against a wide range of aerobic ,anaerobic including MRSA and VRE. yeast and fungi for upto 7-14 days. Parson[13] and his collegues plotted silver content and silver release at 3 and 48 hours against antibacterial activity at 7 days of culture for each silver containing dressing, Aqucel Ag dressing demonstrated superior antibacterial activity compared to other silver containing dressings[14]. The ionic Ag in Aquacel Ag dressing damage bacterial cell wall and interfere with DNA synthesis. Ag ions also denature proteins and harmful enzymes and inhibit protein synthesis, thus killing the bacteria. This multi-targetted mechanism of action means that ionic Ag has a far lower propensity to induce bacterial resistance than classic antibiotics. Duc and his collegues[8] used Aquacl Ag on skin substitues and autografts, found Aquaacel Ag is non toxic to autografts and skin substitues. The carboxymethyl cellulose heavily absorbs wound exudates containing pathogens and converted into a gel, bacteria absorbed into dressing are also destroyed. This ability to lock in exudate fluid with bacteria, harmful enzymes, are thus removed from wound bed. The cohesive gel that intimately confirms to the wound surface maintain a moist environment and help in removal of non-viable tissue from wound ie autolytic debridement, prevent

dead space, less growth of bacteria[12]. The gel also prevents lateral spread of exudate fluid through the dressing, reduces the risk of periwound maceration ofskin. In Jude[16] and collegues performed prospective randomized study on Hydrofiber Ag versus Calcium alginate dressings on diabetic foot ulcer and found Hydrofiber Ag was safe and better in efficacy. Our study of 20 patients of diabetic foot ulcer with mixed infection including documented MRSA treated with Hydrofiber Ag dressing have comparable similar results to other studies regarding its antibacterial activity. Hydrofiber Ag dressingis safe, non toxic[18] and cost- effective[17], as no hospital admission and use of costly antibiotics .

CONCLUSION;

The Hydrofiber dressing with ionic Ag like Aquacel Ag is simple, economical and effective for diabetic foot wounds as well as chronic bed sore with reliable results.

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KNOWLEDGE, APTITUDE AND PRACTICES OF MOTHER'S VISITING PEDIATRICS OPD OF VARIOUS PUBLIC SECTOR HOSPITALS OF LAHORE, REGARDING IMPORTANCE OF BREAST FEEDING

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ABSTRACT

Background and Objectives: Although breastfeeding is a common practice in Pakistan, proper breastfeeding is on the decline. The impact of knowledge about breastfeeding practice is poorly understood. The current study is designed to explore the practices, attitude and knowledge towards breastfeeding and their misconceptions. Objective of this study was to assess the knowledge, attitude and practices of mothers regarding breastfeeding.

Material and Methods: Methods: This is Cross sectional type of study conducted at Pediatrics outdoor departments of various public sector Teaching hospitals of Lahore including "Mayo Hospital, Services Hospital, Jinnah Hospital and Lahore General Hospital" during January – march, 2015 (03 months) with sample size of 170 patients. Consecutive non-probability sampling technique was used to recruit the patients.

Data Collection and analysis: The mothers who agreed to participate were given a self-designed questionnaire consisting of closed and open ended questions. The questionnaire covered basic characteristics of baby, family socio-economic status and knowledge, aptitude and practices regarding breastfeeding. Data analyzed in SPSS Version: 17.0 Results were recorded as percentages, graphs, means and standard deviations.

Results: 58.2% mothers belonged to age group 21-30 years, 40.5% mothers were under metric, 30% were illiterate and 21% were metric pass. 80% of the mothers think breastfeeding is ideal for babies, 26.5% think benefits of breastfeeding last as long as the baby is breastfed and 79% mothers think breastfed babies are healthier than formula fed babies.

Conclusions: The study showed that the lower rates of breastfeeding are influenced by factors like education, age, etc. Other unacceptable practices like pre-lacteal feed, lack of early initiation of breastfeeding and early weaning were found prevalent.

Key words: Breastfeeding, Colostrums, KAP of Breast feeding

Breastfeeding has always been the ideal feeding practice for infants. There is extensive evidence of short-term and long-term health benefits of breastfeeding for infants and mothers. In addition to specific health advantages for infants and mothers, breastfeeding also benefits the society by reducing health care cost, parental employee absenteeism and associated loss of family income. The World Health Organization (WHO) recommends exclusive breastfeeding (breast milk only, excluding water, other liquids, and solid foods) for the first six months of life, with supplemental breastfeeding continuing for two years and beyond.[1] Breastfeeding is associated with a reduced risk of infections Otitis media, gastroenteritis, respiratory illness, sudden infant death syndrome, necrotizing Enterocolitis, obesity, and hypertension[2] as well as it protects mothers from breast cancer.[3] Human milk is species specific to optimize the growth and development of growing infant. 64th world health assembly in Geneva in May 2001 affirmed the importance of exclusive breast feeding for six

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months without even adding a drop of water to it.[1]

REVIEW OF LITERATURE:

Turck.D conducted a study on the health benefits of breast feeding for both mother and child. The study revealed that breast milk contains hormones, growth factors, cytokines, cells etc. and offers many advantages over cow's milk or infant formulae.[4] Breastfeeding allows normal growth until at least 6 months. Breastfeeding is associated with slightly enhanced performance on tests of cognitive development. Exclusive breastfeeding for at least 3 months is associated with a lower incidence and severity of diarrhea, Otitis media and respiratory infection. Very few medications contraindicate breastfeeding. Breast feeding is also associated with a decreased risk of breast and ovarian cancer in the premenopausal period and of hip fractures and osteoporosis in the postmenopausal period. The investigator concluded that breast feeding should be on exclusive basis.

Dr. Jane Grassley conducted a study about the Mother's Guidance. To talk about her study on grandmothers' breastfeeding support for mothers, Dr. Jane Grassley talked to Hamish Holewa for IPP-SHR Podcasts. It was found that a grandmother's own infant feeding practices influenced mothers' decisions to initiate and continue breastfeeding. Open encouragement and support from grand-mothers assisted a mother's decision to breastfeed and helped protect the mother from ongoing justification of breastfeeding.[5] It was also shown that there were numerous myths that persisted in relation to breastfeeding; including: concern that a mother is not making enough milk, which exclusive breast-feeding did not deliver all dietary requirements and that breastfeeding "just did not work anymore". Practical implications suggests including grand-mothers in breastfeeding conversations with health professionals, encouraging grandmother's to tell stories about their experiences, and providing additional information to grandmothers.

Vandenplas conducted a study about the Myths and facts about breastfeeding. The study shows that Exclusive human milk feeding during the first 6 months of life, with delayed introduction of solids, is the recommended feeding for human infants. Human milk reduces the incidence and morbidity related to infection and allergy to cow's milk proteins[6]. Dietary maternal restrictions during pregnancy or lactation cannot be recommended, but may be advised in special cases. A maternal elimination diet seems more effective if associated with environmental hypoallergenic intervention. Milk from mothers consuming cow's milk proteins contains small amounts of beta-lacto globulin, which appear to introduce in the majority of infants both atopic and non-atopic tolerance rather than sensitization. However, it is uncertain whether breastfeeding also reduces the incidence of later atopic disease, since its etiology is multifectorial.

OBJECTIVES:

The objective of the study was to assess mother's knowledge, attitude and practices regarding breastfeeding, and identify breast feeding.

OPERATIONAL DEFINITION:

According to WHO various forms of breast-feeding are

- **Exclusive Breastfeeding:** It requires that the infant receive breast milk only (including milk expressed or from a wet nurse). It allows the infant to receive ORS, drops, syrups (vitamins, minerals, medicine) but not anything else.
- **Predominant Breastfeeding:** It requires that the infant receive breast milk as the predominant source of nourishment. It allows the infant to receive certain liquids (water, juice etc.), ritual fluids and ORS, drops and syrups but not anything else.
- **Complementary Feeding:** It allows that the infant receive breast milk along with some solid or semi-solid foods.

MATERIAL AND METHODS: METHODS:

This is Cross sectional type of study conducted

at Pediatrics outdoor departments of various public sector Teaching hospitals of Lahore including "Mayo Hospital, Services Hospital, Jinnah Hospital and Lahore General Hospital" during January – march, 2015 (03 months) with sample size of 170 patients. Consecutive non-probability sampling technique was used to recruit the patients.

Data Collection and analysis:

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RESULTS AND MAIN FINDINGS:

Table 1: *Ideal food for baby, duration of benefits of breast milk and comparison of health between breast fed and formula fed babies.*

		Breast milk is ideal for babies		Benefits of breastfeeding last as long as the baby is breastfed		Breast fed babies are healthier than formula-fed babies	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
Valid	No	34	20.0	125	73.5	36	21.2
	Yes	136	80.0	45	26.5	134	78.8
	Total	170	100.0	170	100.0	170	100.0

Graph: Best time to start breastfeeding

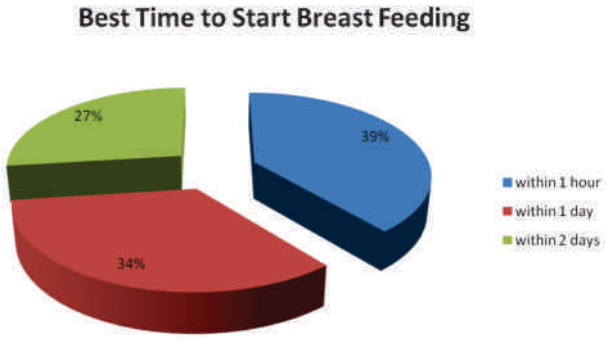


Table 2: *Age of baby to give only breast milk*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4 months	51	30.0	30.0	30.0
	5 months	19	11.2	11.2	41.2
	6 months	88	51.8	51.8	92.9
	Don't know	12	7.1	7.1	100.0
	Total	170	100.0	100.0	

Graph: Appropriate time to start weaning

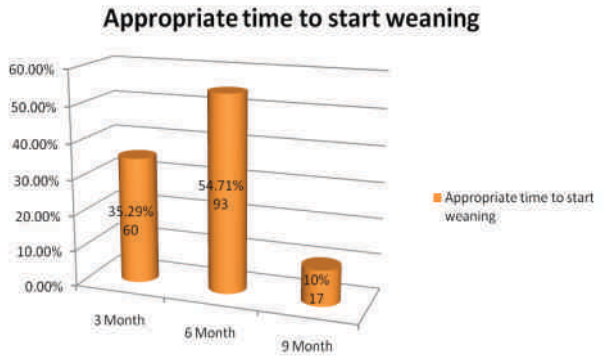
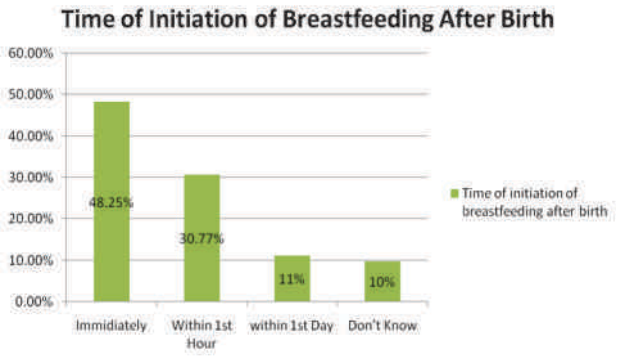


Table 3: *Why is it good to breastfeed your baby*

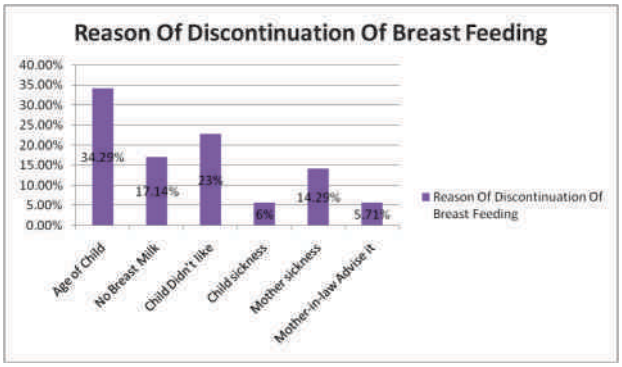
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Gives baby protection	46	27.1	27.1	27.1
	Creates a bond between baby & mother	72	42.4	42.4	69.4
	Makes child intelligent	22	12.9	12.9	82.4
	It is the right food for the baby	30	17.6	17.6	100.0
	Total	170	100.0	100.0	

Graph: Time of initiation of breastfeeding after birth



Graph: Reason of not breastfeeding ever

Graph: Reason of discontinuation of breastfeeding



Graph: Time of introduction of foods other than breast milk

Table: *Frequency of giving other foods before breast milk and frequency of mothers currently breastfeeding*

		Giving other food to child before breast feeding		currently breastfeeding child	
		Frequency	Percent	Frequency	Percent
Valid	No	105	61.8	35	20.6
	Yes	65	38.2	135	79.4
	Total	170	100.0	170	100.0

Table: *For how long do you intend to breastfeed your child*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not breastfeeding currently	35	20.6	20.6	20.6
	Less than 2 years	40	23.5	23.5	44.1
	Up to 2 years	86	50.6	50.6	94.7
	Greater than 2 years	9	5.3	5.3	100.0
	Total	170	100.0	100.0	

RESULTS:

Out of 170 respondents, 58.2% mother's belonged to age group 21-30 years and 4.1% belonged to age group less than 20 years. While 40.5% mothers were under metric, 30% were illiterate, 21% were metric pass and 8% were above metric. 80% of the mothers think breastfeeding is ideal for babies, 26.5% think benefits of breastfeeding last as long as the baby is breastfed, 79% mothers think breastfed babies are healthier than formula fed babies. 39.4% mothers think it is best to start breastfeeding within 1 hour of delivery, 33.5% mothers think it is best to start breastfeeding within 1 day and 27% mothers think it is best to start breastfeeding within 2 days. 51.8% mothers think up to age of six months of age, baby should be given only breast milk, 30% mothers think that up to age of four months, baby should be given only breast milk, 11.2% mothers think that up to age of five months, baby should be given only breast milk.

55% mothers think that the appropriate time to start weaning is six months, 35% mothers think that the appropriate time to start weaning is three months. 42% mothers think that it is good to breastfeed babies because it creates a bond between mother and baby, 27% mothers think that it gives the baby protection,13% mothers think it makes the child intelligent. 16% mothers have never breastfed their child. 48% mothers immediately breastfed their child, 31% mothers breastfed their child within first hour, 11% mothers breastfed their child within first day. 45% mothers didn't breastfed their child because of sickness, 26% didn't breastfed because of lack of milk. 32% mothers added foods other than

breast milk before six months. 38% mothers give other foods to their child before breastfeeding, 79% mothers are currently breastfeeding their child. Among the currently breastfeeding mothers, 50% intend to breastfeed up to 2 years, 23% mothers intend to breastfeed less than 2 years. 34% mothers discontinue breastfeeding because of the age of child; 22% discontinue because the child didn't like.

DISCUSSION:

I have compared my results with a study conducted in Tajikistan[7] in 2007. According to that study, 99.6% women had never breastfed their child while according to our study 16% women had never breastfed their child. According to that study, 90% initiated breastfeeding within 1 hour while according to our study 31% mothers initiated breast-feeding within 1 hour. According to that research, 29% mothers introduced liquids other than breast milk before six months while according to our research 32% mothers introduced liquids other than breast milk before six months. According to that research, 46.5% mothers are currently breastfeeding while according to our study, 79% mothers are currently breastfeeding. According to that research, 63.8% mothers stopped breastfeeding because of the age of the child while according to our research 34% mothers stopped breastfeeding because of the age of the child. According to that research, weaning was started before 4 months in 3% of the cases while according to our study, weaning was started before 4 months in 35% of the cases.

According to that study, 76% mothers think that breastfeeding is beneficial because it provides protection while according to our study 27% mothers think that breastfeeding is beneficial because it provides protection. According to that research, 90% mothers think that breastfeeding should be started within the first hour of delivery while according to our research 31% mothers think that breastfeeding should be started within the first hour of delivery. According to that research, 14.8% mothers said that they had given something else before breastfeeding for the first time while according to our study, 38% mothers said that they had given something else before breastfeeding for the first time.

CONCLUSION:

The study showed that the lower rates of breastfeeding are influenced by factors like education, age, etc. Other unacceptable practices like pre-lacteal feed, lack of early initiation of breastfeeding and early weaning were found prevalent. Women were aware of advantages and disadvantages of breast and bottle feeding but a disparity was observed between knowledge and practice.

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LAPAROSCOPIC CHOLECYSTECTOMY AS A DAY CASE SURGERY---- AN EXPERIENCE

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ABSTRACT

Laparoscopic cholecystectomy (LC)is now the treatment of choice for gall stones. Reduced pain, less wound infection, bleeding and shorter hospital stay are the advantages of laparoscopic surgery, so laparoscopic cholecystectomy as a day surgery is the aim of this study. Day surgery is defined as procedure performed on selected patients and discharged before 24 hours.

STUDY DESIGN; Prospective Clinical Trial

PLACE AND DURATION OF STUDY; The Surgical Department of Ch.Akram Research and Teaching Hospital attached AzraNaheed Medical College Lahore from 2014 –2016.

METHODOLOGY; A total of 105 patients were included in this study, the indication for surgery was simple cholelithiasis after excluding acute cholecystitis by clinical and radiological tests. All patients were informed about discharge policy and postoperative instructions. Pre-operative work up was completed in outpatient clinic and patients were operated on elective day at 9.0am and mostly patients were discharged in evening and in early morning. Operative time, hospital stay and any complication were noted .Mobile telephonic feedback was routinely done for follow up.

RESULTS; Out of 105 patients,70 patients(66.6%) were ASA(1) and 35 patients(33.4%) were ASA(11)as 20 patients were hypertensive ,15 patients were diabetic and controlled by medicines. Laparoscopic cholecystectomy was done for all patients. Conversion rate was 2.8%(3 patients were converted to open cholecystectomy one for Mirriz syndrome , 2 were of difficult anatomy with lot of adhesionsand were excluded from study).The mean hospital stay was11.5 hours(range 10—23 hours),mean operative time was 45 minutes(range30—60 minutes).No morbidity and mortality was reported in this study. Out of 102 patients, only 4 patients(3.9%) were discharged after 48 hours due to vomiting ,abdominal pain and social reasons and settled with conservative measures.

98 patients(96.1%) were satisfied and discharged as Day case surgery.

CONCLUSION; Laparoscopic cholecystectomy is safe and can be done as a day case surgery with reasonable patients satisfaction.

KEY WORDS; Laparoscopic cholecystectomy (LC), ASA(1), (11), Day Case Surgery(DCS)

Laparoscopicchol ecystectomy[1,2] is now the treatment of choice for cholelithiasis due to multiple benefits to patients, eg reduced postoperative pain, less wound infection, less bleeding, shorter hospital stay[3] etc as compared to open cholecystectomy.Currently the majority of patients undergoing elective laparoscopic cholecystectomy were observed in the general surgical ward for short stay as Day case surgery. Although several authers[2,4,5—11] have documented the feasibility of laparoscopic cholecystectomy as Day case surgery yet wide acceptance of procedure requires a proof that there is no added risk to the patients from day casesurgery. DCS is not emergency surgery but elective planned surgery for selected patients and has preset guidelines for patient selection and discharge criteria which were followed in this study on the basis of limited resources. The current study presents our experience with LC as day case surgery.

METHODOLOGY;

The study is designed as prospective clinical

trial conducted in surgical department of Choudhry Akram Research and Teaching Hospitalattached with Azra Naheed Medical College Lahore from 2014 to 2016.

SAMPLE; A total 105 patients with simple cholelithiasis were selected for LC as DCS after excluding acute cholecystitis by clinical and radiological examinations. Mean age is 40.63 (25—70),90 patients are female and 15 patients are male(female to male ratio 6;1).

EXCLUSION CRITERIA;

1-acute cholecystitis 2- patient home distance> 1 hour 3- ASA(111) and higher

4- patients who were converted to open cholecystectomy 5- BMI>35

PRE-OPERATIVE WORK UP;

Pre-operative work up was completed in outdoor clinic which included history, physical examination, standard laboratory and radiological tests within normal limits and anaesthesia consultation. All patients were informed about discharge policy and post-operative instructions.

SURGICAL TECHNIQUE;

All patients were operated on elective day at 9.0 am, two or three doses of intravenous prophylactic antibiotics are given, one dose at the time of induction, anti-emetic ondansetron i/v given to reduce post op nausea/vomiting, standard four ports technique was used, port site was infiltrated with bupivacain 0.5% and use of intraoperative drain was optional. The operative time, any complication like bleeding, CBD, bowel injury, post- operative complaint and hospital stay were recorded. Mobile telephonic feedback was routinely done as early follow up.

RESULTS;

Total patients in the study = 105Mean age group=40.63(25—70)Female to male ratio=6; 1Anesthesiafitness;ASA—(1)=70 patients (66.6% ASA---(11)=35patients(33.4%), 20 patients were hypertensive,15 were diabetic, but all proper controlled by medicines. BMI= 29+_ 1.47 Conversion rate = 2.8% (3 patients, one for suspected Mirrizi syndrome and 2 for difficult Callot,s anatomy due to thick adhesions) are excluded from study. Operative time= 45 minutes (range 30—60 minutes)

Mean hospital stay = 11.5 hours (range 10---23hours)

98 patients(96.1%) out of 102 were discharged as Day case surgery, all patients were satisfied in home, interviewed in follow up outpatient clinic

4 patients(3.9%) were discharged > 48 hours (due to abdominal pain, nausea/vomiting and social reasons)

Re-admission = nil

Morbidity / major complications (bile leak, bleeding, bowel injury)= nil

Mortality= nil

DISCUSSION;

Laparoscopic cholecystectomy is now considered as gold standard treatment for gall stones and rapidly gaining popularity as a Day case procedure[2,4,5,7] because of its benefits to the patients eg reduced pain, less bleeding, less wound infection, shorter hospital stay and early return to work. Day case surgery is defined as procedure performed on selected patient and discharge before 24 hours. Although many authers have documented the feasibility of LC as day case surgery (DCS) in developed countries and preset guidelines[1,2] for patient selection and discharge criteria have been established, wide acceptance of DCLC requires a proof that there is no added risk to patients. Nicholls[1] reported his first series of day case patients in1909.

The selection of patient is a key for DCLC. Reddick and Olsen[6] published in 1990, the first laparoscopic cholecystectomy outpatient series. Several further series confirmed that LC is a safe and effective day case procedure with success rate 80% to 92.7%[2,4-7,9-11]. Ali et al[4] reported successful DCLC

in 92% of selected patients. In our study only patient who fulfill our selection criteria were subjected to DCLC and resulted successful completion of DCLC in 96.1% patients. Post op abdominal pain, nausea, vomiting and social reasons are important factors for delay in discharge 3.9% in our study but easly managed with analgesic and santi-emetic ondansetron[8]. Hollington et al[5] reported post op nausea, vomiting and abdominal pain are frequent reasons for Re-admission but in our study re-admission is zero. DCLC may be possible in complicated cholelithiasis,but surgeon experience, quality of equipmentsand other ancilliary facilities are limiting factors because patient safety must be the top most priority.

CONCLUSION;

Laparoscopic cholecystectomy as a day case procedure is a safe and feasible with high success rate in carefully selected patients with uncomplicated symptomatic cholelithiasis.

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LEVEL OF SATISFACTION IN PATIENTS VISITING ORTHOPEDIC WARD IN VARIOUS PUBLIC SECTOR HOSPITALS OF LAHORE AND ITS DETERMINANTS

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ABSTRACT

Background and Objective: Patient satisfaction is very multifactorial phenomenon and is main criterion to judge working of any health facility. Patients in orthopedics ward like any other ward are very anxious about the outcomes of their illness and residual morbidity at the end of treatment. Patient's compliance, a parameter determined by patient satisfaction, can alter the course of illness and can increase the therapeutic effect of treatment. So we are conducting this study in various public sector hospitals of Lahore, to assess level of patient satisfaction in patients visiting orthopedics ward and suggest improvements that could possibly be made by hospital administration. The objective of study is to investigate the factors responsible for patient satisfaction in orthopedics ward.

Material and Methods: This is Cross sectional type of study conducted at Various Public sector hospitals of Lahore (Jinnah Hospital, Mayo Hospital, and Services Hospital) during April – June, 2014 (03 months) with sample size of 300 patients. Consecutive non-probability sampling technique was used to recruit the patients

Data Collection and analysis: The patients who agreed to informed consent will be given a questionnaire asking questions about ward experience, treatment, facilities provided in ward and other relevant parameters. Data obtained will be entered and analyzed in SPSS Version: 17.0

Results: 46.5% patients had consultation duration less than 5 minutes, 29.0% had 5-10 minutes, and 24.5% had 10-20 minutes consultation duration.15.2% patients rated their experience at ward as poor while 25.5% patients rated their experience at ward as excellent.

Conclusion: Patient satisfaction can be improved by appropriate consultation duration provided by doctor, empathic behavior of staff and provision of facilities in the ward.

Key words: patient satisfaction, consultation duration, orthopedic ward

Patient satisfaction is the ultimate measure of performance of any public or private medical care units. A lot of work has been done to improve patient satisfaction and health care facilities but in developing countries like Pakistan, serious efforts are required. Patient satisfaction is a multifactorial phenomenon. Research done by Levesque MD and his colleges in December 2000 on 708 distributed questionnaires showed that patient satisfaction can be improved by altering patient expectations and decreasing total time spent in clinic. Similar researches were conducted by others.[1, 2, 10, and 11]. Research by Timothy S. Carey MD and his colleagues published in "New England Journal of Medicine" on Oct.5, 1995, showed greater level of satisfaction of patients with primary health care providers than orthopedic surgeons due to cost effectiveness.[4,14] Similarly other factors like provision of informational care and counselling[3], pain management post-operatively5, nursing care quality[12,13], a good discharging experience[12] ,patient expectations, consultancy duration ,technical competency[20], team work among doctors and behavior of medical and para-medical staff and patients role in decision making play a role in determining level of satisfaction.

Pakistan based research could not be found on this subject although Bangladeshi and Indian researches were found. Research by Indu Grewal, JK Das and fellows conducted in New Dehli, India

showed that nursing care, toilet cleanliness, reception services, quality of food served and ventilation in ward have impact on patient satisfaction. The rationale of our research in various public sector hospitals of Lahore, is to assess the level of patient satisfaction, factors responsible for it and suggesting improvements to hospital administration to mobilize human resources, ward facilities and other tools to ensure patient care and delivery of empathic health services.

OBJECTIVES:

The objective of my study was to investigate the factors responsible for patient satisfaction in orthopedic ward in various public sector hospitals of Lahore.

OPERATIONAL DEFINITION:

Satisfaction Level: Satisfaction level will be measured on Likert's scale with series of question regarding services provided, waiting time, physician attitude, examination and procedure during consultation asked by research team.

MATERIAL AND METHODS:

This is Cross sectional type of study conducted at Various Public sector hospitals of Lahore (Jinnah Hospital, Mayo Hospital, and Services Hospital) during April – June, 2014 (03 months) with sample size of 300 patients. Consecutive non-probability sampling technique was used to recruit the patients.

DATA ANALYSIS PROCEDURE:

The patients who agreed to informed consent were given a questionnaire asking questions about ward experience, treatment, facilities provided in ward and other relevant parameters. Data obtained was entered and analyzed in SPSS Version: 17.0

RESULTS AND MAIN FINDINGS:

Graph: Diagnosis of Patients

RESULTS:

Mean age of participants' in the study was 46.4 years with standard deviation of 19.5 years. 30.5% of the patients studied were female while 69.5% were male. 21% of the subjects admitted to the ward were

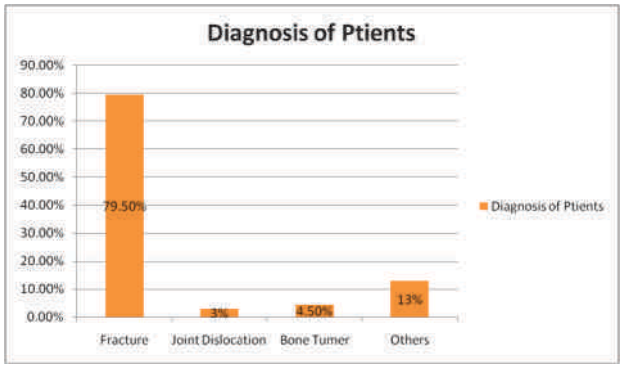

Table: *Consultation duration: time spent by doctor on patient bed*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than 5 minutes	93	46.5	46.5	46.5
	5-10 minutes	58	29.0	29.0	75.5
	10-20minutes	49	24.5	17.0	92.5
	Total	200	100.0	100.0	

Table: *Cost of Treatment and initial admission process*

		cost of treatment		**initial admission process**	
		Frequency	Percent	Frequency	Percent
Valid	Satisfied	164	82.0	187	93.5
	Unsatisfied	36	18.0	13	6.5
	Total	200	100.0	200	100.0

Table: *Information about diagnosis and prognosis provided to subjects.*

		information about diagnosis and treatment		**information about prognosis**	
		Frequency	Percent	Frequency	Percent
Valid	Explained	176	88.0	133	66.5
	Unexplained	24	12.0	67	33.5
	Total	200	100.0	200	100.0

Table: *Satisfaction level (patient's response poor) frequencies.*

		Responses		Percent of Cases
		N	Percent	
Satisfaction level[a]	privacy in ward	12	7.9%	11.9%
	cleanliness in ward	30	19.9%	29.7%
	adequate bathroom facilities	32	21.2%	31.7%
	standard of food given in ward	43	28.5%	42.6%
	behavior of staff	11	7.3%	10.9%
	patients experience of hospital	23	15.2%	22.8%
Total		151	100.0%	149.5%

a. Dichotomy group tabulated at value 4.

Table: *Satisfaction level (patient response excellent) frequencies*

		Responses		Percent of Cases
		N	Percent	
Satisfaction level[a]	privacy in ward	66	28.6%	61.7%
	cleanliness in ward	15	6.5%	14.0%
	adequate bathroom facilities	16	6.9%	15.0%
	standard of food given in ward	23	10.0%	21.5%
	behavior of staff	53	22.9%	49.5%
	patients experience of hospital	58	25.1%	54.2%
Total		231	100.0%	215.9%

a. Dichotomy group tabulated at value 4.

Table: *level of Satisfaction (Frequencies)*

		Responses		Percent of Cases
		N	Percent	
Satisfaction level[a]	privacy in ward	66	28.6%	61.7%
	cleanliness in ward	15	6.5%	14.0%
	adequate bathroom facilities	16	6.9%	15.0%
	standard of food given in ward	23	10.0%	21.5%
	behavior of staff	53	22.9%	49.5%
	patients experience of hospital	58	25.1%	54.2%
Total		231	100.0%	215.9%

a. Dichotomy group tabulated at value 4.

laborers, 13% were shopkeepers and small businessmen, 8% were farmers, and 23% were housewife while 34.5% had other professions. 79.5% of the patients had bone fracture, 3% had joint dislocation, and 4.5% had tumors while 13% had other orthopedic problems. 46.5% had consultation duration less than 5 minutes, 29.0% had 5-10 minutes while 24.5% had 10-20 minutes consultation duration. 82% said the cost of treatment was reasonable while 18% were unsatisfied with the cost of treatment. 93.5% were satisfied with the admission process to the ward while 6.5% said that admission process was unsatisfactory. 79.5% were satisfied with pain management while 20.5% were unsatisfied.

88% were given diagnosis while 12% were not told about their diagnosis. 66.5% of the patients were told about prognosis and 33.5% were not given any prognosis. 7.9% rated privacy in the ward, 19.9% rated cleanliness, 21.2% bathroom facilities, 28.5 rated foods, and 7.3% rated staff behavior as poor and very unsatisfactory. Further data showed that 28.6% were very satisfied with privacy in the ward, 6.5% with cleanliness, 6.9% with bathroom facilities, 10% with quality of food, and 22.9% with behavior of staff and rated their experience at hospital as excellent. While rest of the majority of subjects said that all these facilities were average.

DISCUSSION:

The most important criterion regarding patients satisfaction level in hospital seemed to be the consultation duration i.e. the time spent by doctor on each patient. Patients who were given more time by the doctor seemed satisfied in the sense that they felt getting proper attention by the doctor while patients who were given less than 5 minutes of consultation duration, rated their hospital experience as very unsatisfactory. Research by Levesque M.D1 in the literature review showed that patient satisfaction is increased by decreasing the total time spent in the ward but our study showed increase in satisfaction with increase in consultation duration. This may seem contradictory but actually it is not as we noticed in our study that patients who were given prognosis and proper future plan were more satisfied and consultation duration is the time spent by doctor on each patient and not the total time spent by patient in the ward.

The average age of patients who were admitted to the ward was around 45-50 years. This seemed very predictive and logical as this is the age when degenerative changes in the musculoskeletal system of the body are occurring. Females are affected at

this stage especially as this is the age when they are having hormonal changes of menopause with decrease in the bone strength due to decrease in estrogen levels resulting in joint pain and more frequent fractures. The reason for more laborers to be admitted to the ward was not totally because of some occupational hazard as Lahore is an urban area where majority of the working class is laborers although it can be a factor as employee protection laws and measures are not fully applied to the working sites and laborers are exposed to physical injuries. Large percentage of housewife ladies admitted to the ward is due to osteoporotic changes as a result of menopause.

Majority of the patients had fractures (79.5%) as it is the most common orthopedic morbidity while patients of joint dislocation need not to be admitted for long periods unless some complication occurs and other problems like tumors and musculoskeletal problems are relatively less common. Patients mostly (82%) were satisfied with cost of treatment due to public health facility funded by government. So patients had to bear minimal expenses but some patients (18%) were unsatisfied with treatment expenses due to unavailability of expensive medicines in hospital pharmacy which they had to buy themselves from outside. In our study treatment expenses was not a very big factor governing patient satisfaction as patients were expecting it to be government's responsibility to bear treatment expenses rather quality of health care provided to patients was more important in patients' view.

Ward had a good system of pain management and most of the patients (79.5%) were satisfied while admission process to the ward was also satisfactory to 93.5% of subjects. Average of 14.9% of the subjects rated the privacy in ward, cleanliness, bathroom facilities, and food quality and staff behavior as excellent. A high correlation was found between staff behavior and patient satisfaction as 22.9% of subjects who rated staff experience as excellent were satisfied with their experience at hospital. Average of 16.9% of subjects rated these facilities as poor and very highly unsatisfied with ward working.

CONCLUSION:

Patient satisfaction can be improved by appropriate consultation duration provided by doctor, empathic behavior of staff and provision of facilities in the ward.

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LONG TERM RESULTS OF SUBCUTANEOUS ANTERIOR TRANSPOSITION OF THE ULNAR NERVE IN CUBITAL TUNNEL SYNDROME

Syed Saqib Raza Bukhari, Naveed A Khan, Ahsen Nazir Ahmed, Faiza Siddique, Usman Siddique, Hamad

ABSTRACT

Objective: Long term results in subcutaneous anterior ulnar nerve transposition in the cubital tunnel syndrome treatment.

Methods: This is a retrospective study in which 33 patients (males 24, females 9 and mean age was 48 years ranging from 26 to 59) went through subcutaneous transposition of the ulnar nerve. Follow up period means was 4 years and 9 months (Ranging from 2 years 6 months to 8 years). For preoperative scoring Modified McGowan's classification was used and for post operative evaluation Wilson & Krout classification was used. Preoperatively 9 patients(27%) had grade 2B, 12(36%) had grade 3, 5 patients (15%) had Grade 1 and 7 (21%) had Grade 2A neuropathy.

Results: In 24(73%) patients the results were excellent, good in 7 (21%), in 1 (3%) fair and in poor in 1 (3%). Neuropathy was developed in the patients with poor results following a crush injury. Preoperative McGowan grade and post operative Wilson & Krout score negative correlation was observed ($p<0.05$, $r=-0.43$). As the time from the symptoms onset increased ($p<0.05$) the success rate of the operation was significantly lower in patient groups. There were no complications.

Conclusion: For the treatment of cubital tunnel syndrome the subcutaneous Ulnar nerve anterior transposition is an reliable and effective surgical method with a least complication rate.

Key words: Anterior transposition; cubital tunnel syndrome; neuropathy; ulnar nerve.

Cubital tunnel syndrome is the Ulnar nerve entrapment at elbow. It is the second most common entrapment neuropathy.[1-5] In 1878 it was initially identified and in 1958 fist "cubital tunnel syndrome" was used.[6] Despite the presence of soft tissue masses (ganglion, tumor), bone problems (osteophytes, fracture cubitus valgus), subluxation of the ulnar nerve medial epicondyle in some patients, post traumatic strictures of facial structures , in most cases no certain etiology can be determined and it is thus evaluated as idiopathic.[3,7] The ulnar nerve is compressed by the Osborne's ligament in the most of cases at the medial epicondyle and immediate distal end between the fasciae of ulnar heads and humeral heads of the flexor carpi ulnaris muscle.

In cubital tunnel syndrome numbness in the ulnar nerve distribution is the most common finding. Mostly patients complain radiating pain from the medial aspect of the elbow to proximal forearm and pain behind the medial epicondyle, as well as weakness of grip strength and intrinsic muscles. Atrophy of intrinsic muscles especially first dorsal interosseous muscle is seen in prolonged instances.[7] In acute and subacute entrapment neuropathy is initial treatment is conservative. Avoidance of elbow flextion and rest and pressure on the nerve are usually effective; however, in some cases brace immobilization is also useful. When non-operative methods fail surgical decompression is indicated.[1,8] Open and endoscopic are the surgical treatment options, other surgical options are the medial epicondylectomy and anterior transposition (sub-muscular ,subcutaneous, intramuscular). The selection of a surgical technique is controversial. The relative simple technique is subcutaneous

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anterior transposition of the ulnar nerve with low complication rates.[1,5]

Patients and methods

Total 47 patients (connective) with cubital tunnel syndrome operated for subcutaneous anterior transposition of the ulnar nerve and were evaluated retrospectively. In 9 patients with concomitant cervical radiculopathy, alcohol abuse, carpal tunnel syndrome, chronic renal failure or hypothyroidism were excluded and 4 patients were lost to follow-up. We included the thirty three patients (24 males and 9 females; mean age: 48 years; range: from 26 to 59 years). The left side was involved in 12 patients and right side was involved in 21. Single surgeon performed procedure in all cases.

Patient's were diagnosis bases of history and physical examination findings and confirmed with electrodiagnostic test results. In ring and little finger sensory loss and numbness, loss of fine motot skills, medial elbow pain, weakness of hand grip and intrinsic muscles strength, atrophy of the first dorsal interosseous muscle, a positive elbow flexion and positive Tinel's sign and two-point discrimination were taken into consideration.

Electrodiagnostic tests included needle EMG and nerve conduction studies. An abnormal motor conduction velocity (MCV) is less than 47 m/s and a sensory conduction velocity (SCV) of less than 54 m/s. Pathological findings on EMG included decreased recruitment, abnormalities in the configuration of the motor unit action potential and fibrillation activity.[9]

Three months before surgery all patients had conservative treatment. For additional bone pathology radiograph were performed. The mean period from the onset of symptoms to surgery was 11 (range from 6 to 36) months. In two cases cubital tunnel syndrome was due to former trauma (cubitus valgus deformity due to lateral condyle pseudarthrosis of the humerus and a crush injury) while etiology was idiopathic in all other cases. The patient with the crush injury previously underwent two surgeries and ulnar nerve decompression without transposition.

According to the modified McGowan classification patients were divided in four grades.[10] Preoperatively, 35±9 m/s was the mean value of MCV at the elbow segment. In the forearm the MCV were within normal limits. In 20 patients EMG results were abnormal.

18 patients were operated under general anesthesia, 3 of the patients were operated under axillary block anesthesia and 12 under regional intravenous anesthesia, all with pneumatic tourniquet hemostasis. To protect the medial antebrachial cutaneous nerve careful dissection was performed protect the medial antebrachial cutaneous nerve and the vascular structures of the ulnar nerve while releasing and transposing the nerve . In all the patients medial intermuscular septum was resected. The nerve was lifted from its bed and transposed anterior to medial epicondyle. A sling of subcutaneous tissue sutured to the fascia over the medial epicondyle was created to prevent the nerve from returning to its groove (Fig. 2). Apparent scarring of the nerve and adherence to surrounding tissues was observed in the patient with the crush injury. No subluxation of the ulnar nerve was present in any patient. The elbow was not immobilized postoperatively and immediate active range of motion exercises were encouraged to allow excursion of the ulnar nerve and prevent fibrosis in the surgical bed. No complications were observed.

Results were evaluated with the modified Wilson & Krout criteria.[11] Spearman and chi-square tests were used in the statistical evaluation of the data. P values of less than 0.05 were considered statistically significant.

RESULTS

4 years to 9 months was the means postoperative follow-up ranging from 2 years 6 months to 8 years. There were no early or late complications or recurrences.

Except in one case symptomatic improvement was observed. Results based on the Wilson & Krout

classification were excellent In 24(73%) patients the results, good in 7 (21%), in 1 (3%) fair and in poor in 1 (3%). Only 2 (6%) of the patients had fair and poor results and both had a postoperative modified McGowan score of Grade 3. The patient who had undergone two previous surgeries due to crush injury and neuropathy had poor results.

There was a negative correlation between the preoperative McGowan grade and the postoperative Wilson & Krout score ($p<0.05$, $r=-0.43$). The success rate of the operation was significantly lower in patient groups as the time from symptom onset increased ($p<0.05$).

DISCUSSION

In cubital tunnel syndrome the entrapment of the ulnar nerve is a source of upper extremity motor and sensory symptoms. Nerve compression treatment is the decompression of the nerve. Regarding the surgical treatment of cubital tunnel syndrome no consensus exists in the literature.[7,12-15] Open and endoscopic decompression are the surgical treatment options for ulnar nerve decompression, anterior transposition and medial epicondylectomy are the other options.[1,5,13,15,16]

All tissues involves in ulnar nerve constricting are mainly Osborne's ligament released, in its bone tunnel bed nerve is not separated, by removing the bone fragments bone tunnel is expanded and compression on ulnar nerve is relieved. Than the simple decompression this procedure is more complicated.[17]

The nerve pressure can be released by both of these methods but it doesn't effects intraneural pressures. Tranpositioning the ulnar nerve relieves the intrinsic intraneural pressure is the basic idea which occurs during elbow flexion.[18] At the normal position of ulnar nerve it is subjected to friction, pressure and traction. Osborn's ligaments on elbow flexion the cubital tunnel get narrows due to medial collateral ligament bulges below the nerve.[6,19] On elbow flexion cross-sectional shape of the cubital tunnel changes from oval to a flattened ellipse.[20] 55% volume of cubital tunnel decrease on elbow flexion and pressure increases to 7 times when the flexor carpi ulnaris contract and it increases to > 20 times when flexor carpi ulnaris muscle contraction added.[21] On 130 degree elbow flexion more than 45% intraneural pressure increased which is greater than the extraneural pressure and 4 cm proximial to tunnel 63% greater than the extraneural pressure.[22,23]

Ulnar nerve normal excursion is 16 mm and it increases to 22 mm with the combination of movement at the shoulder, elbow, wrist and fingers.[24] With the elbow flexion ulnar nerve lengthens from 4.7 mm to 8mm with shoulder external rotation and abduction and an average 29 % strain occurs.[25]

Ulnar nerve anterior transposition will decrease the traction and strain which leads to increased intraneural pressure, it will serve to treat the etiology. Decompression with medial epicondylectomy and simple decompression decreases the extrinsic pressure on the nerve, but does not change the traction effect. Simple decompression does not decreases the traction forces on the nerve with elbow flexion.[26] Moreover, after simple nerve decompression significant ulnar nerve instability was found.[27,28]

To investigate the best appropriate technique in the treatment of cubital tunnel syndrome numerious comparative studies were conducted. Most of these used the McGowan classification system.[29] in 1950 which is based on the loss of motor function but it does not include sensory changes. Most of the patients mainly have sensory complaints while motor function impairments in late advanced cases. Goldberg et al. 10 modified the McGowan's classification system in 1989, in which he included motor as well as sensory deficits.

Review literature on cubital tunnel syndrome surgical treatment does not show any one single procedure superior than others, in patient select usually there is a bias. McGowan's classification system may also be misleading and old one. In patient with short duration mild to moderate symptoms undergo simple decompression, anterior transposition is helpful in patients with long duration and with severe symptoms, in both groups it has

favorable results. In our cases series those patients having duration of symptoms less than 6 months had better results after the success of the operation statistically higher than the others ($p<0.05$), less the success of surgery in longer the onset of symptoms. Excellent surgical results obtained by Dellon[27] with minimal nerve compression. Patients with moderate decompression were rarely successful. The efficiency of partial epicondylectomy and in situ decompression were reported to be similar while subcutaneous anterior transposition lacked the efficiency of the other two methods.[7] Unequal patients distribution according to grading scale as author stated limited the solidity of results, and in severe cases subcutaneous anterior transposition has better outcome than partial epicondylectomy. Hahn et al.,[13] conducted a study on the patients had a duration of symptoms was similar, the clinical results were similar of the subcutaneous anterior transposition to the ulnar nerve decompression with minimal medial epicondylectomy in spite of the preoperative Dellon's grade at the final follow-up. However, statistically there were differences between two groups in terms of procedure related morbidities and the incision length in favor of the epicondylectomy group.

High success rate and lesser complication the ulnar nerve anterior subcutaneous transposition is frequently performed as it is a simple procedure. Morbidity due to submuscular or intermuscular transposition is high as compare to subcutaneous transposition.[8] McGowan grade 2 and 3 classification the subcutaneous and submuscular ulnar nerve transposition has similar results.[18] After subcutaneous anterior transposition no immobilization is needed. Early mobilization allows early nerve gliding so we don't use postoperative immobilization, and it prevents the perineural fibrosis.8 Early mobilization reduces the hospital stay, return-to-work early so it is more cost effective.[31]

After anterior subcutaneous transposition complications like painful neuroma and ulnar nerve functions deterioration have been reported.[13] Cubital tunnel surgery has 35% patients had residual surgical site symptoms and overall failure rate is average 20%.[32] Failed surgery can be attributed to creation of iatrogenic compression , inadequate decompression, scar formation, iatrogenic nerve injury, ulnar nerve subluxation and kinking of the ulnar nerve. At the medial intermuscuar septum iatrogenic compression can occurs with anterior transposition as a result of inadequate distal and proximal nerve mobilization, over an unreleased septum kinking of the nerve as well.33 In all patients medial intermuscular septum should be resected so after anterior tranposition it does not become a proximal site of compression.[5,33] After cubital surgery cutaneous neuromas are common cause of continued pain. During ulnar nerve exploration the medial antebrachial cutaneous nerve may be transected or injured. Devascularization of the ulnar is the probable causein the deterioration of functions.[33] In our case series we did't observe any such complications. None of the patients developed subluxation of ulnar nerve, paralysis or flexion contracture. In order to protect the medial antebrachial nerve the incisions should be in front of medial epicondyle.[12]

We observed that subcutaneous anterior transposition gives excellent and good mid- and long-term results. 31 out of 33 patients had good and excellent results (94%),one had poor (3%), and one had fair result (3%). The patient having crush injury of elbow had poor result, simple ulnar nerve decompression twice was performed and the scarring of the nerve, implying an intrinsic damage of the nerve. Scodary subcutaneous anterior nerve transposition 75% good to excellent results were reported by Caputo and Watson34. For the primary procedure these results are less favorable, subcutaneous or submuscular anterior transposition provides most patients at least partial pain relief. In our cases this didn't happen, perhaps it was not a secondary revision surgery for idiopathic entrapment.

In conclusion, chronic patients with advance disease and long duration with intrinsic nerve damage relatively poor results of anterior subcutaneous transposition in some studies can be attributed to the fact that this procedure is particularly preferred. Ulnar nerve subcutaneous transposition for cubital tunnel syndrome is easy and reliable method with least complications rate, it has mechanical advantages so it should be preferred in solving the nerve traction problem.

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MUCINOUS (COLLOID) CARCINOMA, A RARE BREAST CANCER: CASE SERIES OF 8 CASES SEEN IN OUR PRACTICE

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ABSTRACT

Mucinous (Colloid) carcinoma of breast is among the rare types of breast cancer. The tumor is made up of abnormal cells that "float" in pools of mucin. It carries a better prognosis as compared to other malignancies of breast. We present here the histopathologic features of eight cases of mucinous carcinoma of breast that were reported at the Department of Pathology, Fatima Memorial Hospital during the period of last 5 years. Materials & Methods: Routine H&E staining and immunohistochemistry (wherever applicable) were performed on every breast cancer case. The results were interpreted by the histopathologists and reported. The histopathology reports from January 2011 to August 2015 were retrieved and the data was analyzed. Results: Mucinous carcinoma of breast accounted for only 1.5% (8 cases out of a total 548 cases) of breast cancers in the study period. The patients over the age of 50 were 5 (62.5%) and the age range was 38 to 80 years. Five cases had cancer in right breast as compared to three having left sided disease. Complete data was available in two mastectomy cases with pathological staging of pT3pNx and pT3pN1a. In three cases for which receptor studies were available, two cases had 'Luminal B' (ER+, HER+) molecular subtype and the third one was unclassified (ER+, HER2 equivocal).Conclusions:Mucinous carcinoma was a rare encounter in our practice. Most of the patients were above the age of 50. Right breast was involved more frequently than the left one. The cases presented at advanced pathological T stage. Luminal B was the observed molecular subtype in contrast to luminal A which reported to be most frequent in literature. Our data is comparable with the available literature and the deviations seen are because of limited number of cases in our data.

KEYWORDS: Mucinous carcinoma, colloid, breast cancer, case series.

Breast cancer is the most common cancer worldwide including Pakistan[1]. Several studies have shown that prognosis of breast cancer depends on certain morphological features including tumor size, tumor grade, histologic type and lymph node metastasis [2]

Mucinous breast cancer is a well differentiated, rare histologic subtype of breast cancer that constitutes 1-3% of all breast cancers [3].Two types of this tumor have been described in the literature: Pure Mucinous Carcinoma(PMC) that consists mostly of tumor tissue with extracellular mucin production and Mixed Mucinous Carcinoma (MMC) that also contains infiltrating carcinoma without mucin(10) It has a lower incidence of lymph-nodeinvolvement, favorable histological grade and higher estrogen receptor (ER) and progesterone receptor (PR) expression, and usually occurs in women aged over 60 years[4]. It is defined by mucinous component of more than 90%. [Prognosis of mucinous carcinoma is good with survival rate of 94%, 89%, 85% and 81% in 5, 10,15 and 20 years respectively and its prognosis is better than that of infiltrating ductal carcinomas.[4]

Objective of this study was to present case series of mucinous carcinoma in Fatima Memorial Hospital (Lahore) showing its histologic features and immunohistochemical characteristics.

MATERIALS AND METHODS

In this study, we retrospectively retrieved and reviewed 5-year record of reports of breast cancer cases from January 2011 to August 2015.All cases of mucinous carcinoma were selected. The other sub-types of breast cancer were not included in the study. The hemotoxylin and eosin stained slides and IHC stains of selected cases were reviewed by the

histopathologist. Assessment of age, laterality, type of specimen, tumor size, lymph node metastasis, margin involvement and receptor studies was done. Frequencies and percentages were calculated for qualitative variables like age, laterality, T-stage and lymph node metastasis and hormone receptor studies.

RESULTS

Out of 548 breast cancer cases studied, eight cases (1.5%) were diagnosed as mucinous carcinoma (Figure. 1).Most of the patients were elderly with 62.5% (n=5) cases above 50 years (Table.1).The mean age was 55 years and the age range was 35-80 years. Involvement of right side was seen in 62.5% (n=5) cases (Table.2). Of eight cases, 4 were biopsies, 2 were tru-cuts and 2 were mastectomies (Table.3).Associated DCIS of low grade, cribriform pattern was seen in one case and none of the case showed any association with Paget's disease. Deep margin involvement was seen in 1 out of 2 mastectomies (Table.6). Tumor size seen in two mastectomy cases was 62 and 68 mm. Pathological T staging and N staging were available in 2 cases with nodal involvement in one case (Table.4). In three cases for which receptor studies were available, two cases had 'Luminal B' (ER+, HER+) molecular subtype and the third one was unclassified (ER+, HER2 equivocal) (Table.5, Figure.2).

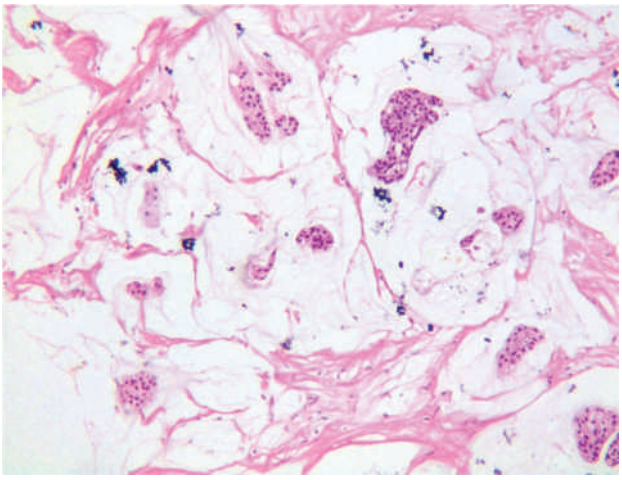

Figure.1. *Mucinous carcinoma of breast showing mucin pools with floating tumors cells. H&E, 10x*

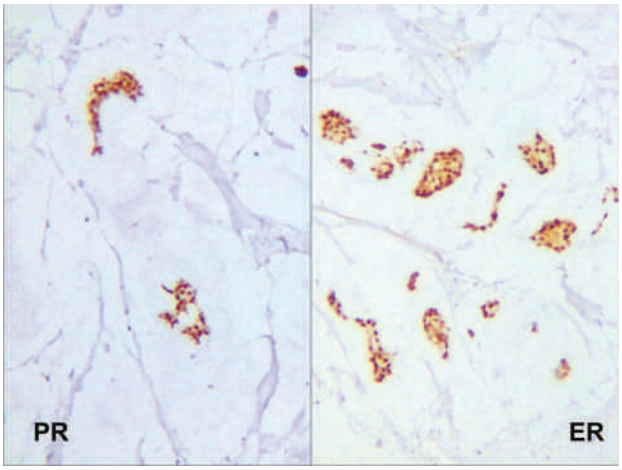

Figure.2. *Mucinous carcinoma of breast showing hormone receptor positivity for ER and PR. IHC, 10x*

Table 1: *Age wise Distribution of the Patients.*

Age Range (years)	No. of Cases	Percentage
50 and below	3	37.5%
Above 50	5	62.5%
Range	35-80 years	
Mean	55 years	

Table 2: *Side/Laterality of the Specimens.*

Laterality	No. of Cases	Percentage
Right	5	62.5%
Left	3	37.5%

Table 3: *Type of Biopsy Performed.*

Procedure	No. of Cases	Percentage
Biopsy	4	50.0%
Tru-cut	2	25.0%
Mastectomy	2	25.0%

Table 4: *TNM Staging.*

TNM Stage	No. of Cases	Percentage
pT3	2	100.0%
pNx	1	50.0%
pN1a	1	50.0%

DISCUSSION

Mucinous carcinoma is an uncommon variant of breast cancer with an overall incidence of 1-7% of all breast cancers. Our results showed frequency of 1.5% and it is compatible with the international studies.[5,6]

It occurs in elderly patients with higher

Table 5: Molecular subtypes.

Molecular subtypes	No. of Cases	Percentage
Luminal A (ER+, HER2-)	0	0%
Luminal B (ER+, HER2+)	2	100.0%
Triple negative/Basal-like (ER-, HER2-)	0	0%
HER2 only (ER-, HER2+)	0	0%
Unclassified (ER+, HER2 equivocal)	1	0%
TOTAL	3	100.0%

Table 6: Other Characteristics seen in Mastectomy Specimens.

Other Characteristics	No. of Cases	Percentage
DCIS	1	50.0%
Paget's disease	None	0.0%
Deep margin involvement	1	50.0%
Tumor size	62mm and 68mm	-

incidence in peri-menupausal and post-menopausal age groups. The incidence of mucinous carcinoma below 35 years is 1% [5,7].In our study, the age range was 35-80 year and the mean was 55 years. None of the case was below 35 years. The pathologic staging of mastectomies in our study showed pT3pNx and pT3pN1a.The advanced stage in our case can be due to delayed diagnosis because it can be mistaken for benign lesion due to its well-circumscription and absence of clinical features.

[The tumor size of carcinoma is relatively smaller and less frequently involves overlying skin or underlying fascia. In our study the tumor size was 62 and 68mm and deep margin involvement in one case. It contrasts with the literature and likely explanation is late presentation[9]. Mucinous carcinoma does not frequently metastasize. Only 3-15%of cases have been seen to metastasize.[10] In our case, one of the case showed lymph node metastasis.

Mucinous carcinoma are usually ER and PR positive and do not express Her2-neu and they respond to hormonal therapy[11]. In our case, all three cases with available hormone studies were hormone receptor positive. Two of them showed Her2-neu expression and one case was equivocal.]

CONCLUSION

Mucinous carcinoma is rare entity and uncommon subtype in our set-up.It usually occurs in elderly patients. The cases usually present at early stage in contrast to our study in which late presentation is noted. size of the tumor is smaller and does not involve the skin or fascia in contrast to our study in which one case had deep margin involvement. Right sided involvement is seen more. The mucinous carcinomas are usually hormone receptor positive.

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PRESCRIPTION PATTERNS FOR TUBERCULOSIS TREATMENT AND ADHERENCE TO NATIONAL GUIDELINES FOR TREATMENT OF TUBERCULOSIS IN PUBLIC OWNED TERTIARY CARE HOSPITAL IN LAHORE.

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ABSTRACT

Background and Objectives: Tuberculosis (TB) is a major problem of public health in Pakistan. Poor prescribing habits cause prolonged morbidity, increased mortality and emergence of drug resistant organisms. This study was carried out to evaluate the prescribing practices of anti-tuberculosis medications by doctors and adherence of prescribers with treatment guidelines as laid down by national tuberculosis control program in tertiary care hospital in public sector.

Setting and study design: This descriptive study was carried out in chest clinic of Sir Ganga Ram Hospital Lahore.

Study duration: One quarter from January 2014 to March 2014.

Results: In the present study prescription analysis showed that 87.61% wrote at least 4 drugs according to NTP guidelines. Weight, date treatment started, diagnosis and treatment category as desired by NTP in 31.42%, 39.04%, 56.19% and 0% respectively. 89(84.76%)prescriptions were in legible handwriting and easily readable. 58(55.23%) prescriptions carried precautions while taking drugs and 19(18.09%) instructions regarding consultation of doctor in case of any adverse reaction or drug allergies. Only 53(50.47%) asked the patient to come for a follow up and not a single advised a date.

Conclusion: The results of this study reflect that significant number of doctors in public owned tertiary care hospitals did not adhere to standard norms for prescription for TB patients recommended by national guidelines. These results also show the lack of effectiveness of HDL intervention of NTP and that the doctors in the hospitals are not receiving continuing education on TB case management.

Key Words: Tuberculosis (TB), National tuberculosis control program (NTP), Provincial tuberculosis control program (PTP), Hospital DOTS linkages (HDL),Multi-drug resistant tuberculosis (MDR-TB), Pulmonary tuberculosis (PTB), Fixed dose combination(FDC)

Tuberculosis (TB) is a major problem of public health in Pakistan. Pakistan ranks 4th among 22 high TB burden countries[1]. It account for approximately 64% of the TB burden of the Eastern Mediterranean Region (EMR) of the World Health Organization (WHO)[1]. The incidence rate of TB is 276/100,000. Prevalence is 348/100,000 and mortality rate of TB is 34 deaths per 100,000 of population[2].

The treatment of TB is complex. The aims of successful treatment and reduced levels of drug resistance can be achieved with the adherence to regimens with the correct combination of drugs and recommended dosages, over a certain period of time[3]. In order to standardize the TB treatment, government of Pakistan has introduced the guidelines in 1995 which were revised in 19994. Poor prescribing habits cause prolonged morbidity, increased mortality and emergence of drug resistant organisms[5]. Prescription errors in terms of drug regimen, dosage and duration are certainly one of the reasons why Pakistan ranks 4th among 22 high TBburden countries and 27 high multi-drug resistant (MDR) tuberculosis burden countries[6].

In one study conducted to look at the prescribing habits of doctors working in private teaching hospital of Pakistan, it was found that 79% of them prescribe four drugs that are recommended in National guidlines[7]. Public health sector is expected to follow National guidelines for treatment of TB but there is paucity of studies in this sector.

This study was carried out to evaluate the prescribing practices of anti-tuberculosis medications by doctors in tertiary care hospital in public sector and adherence of prescribers with treatment guidelines as laid down by National tuberculosis control program.

SUBJECT & METHODS:

A descriptive and observational study was carried out in the outdoor patient department (OPD) of Government Model Chest Clinic, Sir Gangaram hospital, Lahore. All the patients of both sexes and of all age groups except children <14 years attending the department who gave history of previous treatment with anti-tuberculosis drugs by health care provider in public sector, were requested to deposit a Xerox of their prescriptions for this study. A total of 130 prescriptions observed over a period of 90 days during the working hours of OPD. 105 patients agreed to deposit their prescriptions. The 1st prescription of anti TB drugs of each patient was enrolled in the study. Any modification in the regime on account of adverse reactions or co-morbidities excluded the prescription from the studies. Any case of diagnosed drug resistant tuberculosis was excluded from the study. The data from these prescriptions along with the demographic data of the patients taking treatment was then entered into a Microsoft excel programme especially designed for the study and then subsequently analysed. The prescriptions were then evaluated by the software programme as per the recent WHO guidelines and a prescription was labeled to be correct if it fulfilledall of the following criteria:

- At least 4 first line anti TB drugs were prescribed.
- All the drugs were in doses as per weight as per WHO recommendations.
- All the drugs were prescribed to be taken at once or at the same time.
- The prescription did not contain any second line ant TB drug since all diagnosed drug resistant TB patients were excluded from the study

RESULTS

A total of 105 prescriptions were included in the study. The various parameter of anti-TB prescription are presented in table 1. Out of 105 prescriptions analyzed 92(87.61%) patients were prescribed with at least four first line anti-TB drugs. 66(62.85%) favoured fixed dose combination while the remaining preferred split drugs. 2(1.90%) of prescriptions also contained drugs other than those required for treating newly diagnosed TB cases.

The patient record on the prescriptions showed that weight was recorded by 33(31.42%). Out of 33(31.42%) prescriptions bearing weight, 17(54.84%) were correct and remaining 16(51.61%) were faulty. Suboptimal dosing was present in 09(29.02%) and overdosing was present was in 07 (22.58%).

Diagnosis was present in 59(56.19%) prescriptions. Interestingly not a single doctor mentioned any categorization of the disease as desired by national guidelines.

A significant number of prescription 89(84.76%) were in legible handwriting and easily readable. 58(55.23%) prescriptions carried precautions while taking drugs and 19(18.09%) instructions regarding consultation of doctor in case of any adverse reaction or drug allergies. Only 53(50.47%) asked the patient to come for a follow up and not a single advised a date.

Table 1: *n-105*
Prescription pattern of anti-TB drugs for the treatment of a new smear-positive case of PTB

Variable	Number (%)
At least four drugs	92(87.61%)
Fixed dose combination (FDC)	66(62.85%)
Diagnosis	59(56.19%)
Treatment category	0 (0 %)
Date treatment started	41(39.04%)
Weight	33(31.42%)
Legibility	89(84.76%)
Instructions while taking drugs (single daily dose)	57(54.28 %)
Instructions regarding consultation of doctor in case of any adverse reaction or drug allergies.	19(18.09%)
Advise the patient to come for a follow up	53(50.47%)

Table 2: *n- 33*
Prescriptions for doses as per body weight

Prescription dosing	Number (%)
Correct	17(54.84%)
Faulty	16(51.61%)
Suboptimal	09(29.02%)
Overdose	07(22.58%)

DISCUSSION

Tuberculosis control in Pakistan is primarily the responsibility of the government. It is therefore important to know the prescribing practices of these doctors. The main objective of this study was to assess whether national guidelines for the control of TB are being followed by the prescribing doctors of public owned tertiary care teaching hospital.

To our knowledge no study of this type has been conducted previously in public owned tertiary care hospitals. In the present study prescription analysis showed that 87.61% wrote at least 4 drugs according to NTP guidelines, Results of the present study are comparable with the study conducted by hussain A (2005)8 who reported83 % doctors, while Khan J (2003)9 reported 73.37% prescriber were writing 4 drugs as recommended by NTP[9]. Only 39% of general practitioners of Karachifavored prescribing 4 drugs in KAP study of RizviN (2001)[10]

In this study 54% prescribed dosages were correct. A study conducted in Rawalpindi and NWFP Pakistan reported that 43.18% and 35.2% doctors could prescribe correct dosage[8,11], while Khan JA (2003)[7] reported in his study that 53% prescriber were writing drugs in correct dosage. Misra G and Mulani J (2003)12 conducted their study in India and reported that only 4.76% doctors in public sector under revised national tuberculosis control program could prescribe anti-TB drugs in correct dosage. Almost same results 7.3% were notedby Rizvi N in his survey of general practitioners conducted in Karachi[10].

The results of this study showed that 66% doctors favored fixed dose combination (FDC). The results of this study are in agreement with other studies conducted on private practitioners in rural district of province Sind and Rawalpindi favoring 73% and 83% FDCs[8,13]. Most of these private practitioners also work in government hospitals in our setting.

Weight, date treatment started, diagnosis and treatment category as desired by NTP in 31.42%, 39.04%, 56.19% and 0% respectively. The study in Pakistan Hussain A (2015)8 on adherence of private practitioners with national tuberculosis guidelines pointed out that weight and treatment category were present on 18.9% and 0% prescriptions only. The results of this study show the importance of dissemination of NTP guidelines for management of TB on large scale.

The results of this study reflect that significant number of doctors in public owned tertiary care hospitals did not adhere to standard norms for prescription for TB patients recommended by national guidelines and are not receiving continuing education on TB case management. These results also show lack of effectiveness of hospital DOTS linkages (HDL), intervention to introduce and strengthen TB-DOTS in teaching and private hospitals by staff training and enhanced intra-hospital monitoring. It is suggested that issuance of guidelines at the central level is not sufficient; a system for supervising and evaluation of TB prescriptions is essential.

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PREVALENCE AND SPECTRUM OF VALVULAR HEART DISEASE AMONG ADOLESENTS AND ADULT PATIENTS ADMITTED IN THREE TERTIARY CARE HOSPITALS:

Aneeqa Shamshad Butt, Noshin Wasim Yousf, Mamoon Akbar Qureshi, Rahat Sarfaraz, Sana Khan

ABSTRACT

Background: Heart valve disease is a significant and increasing global problem. It is a disease process involving one or more of the valves of the heart (the aortic and mitral valves on the left and the pulmonary and tricuspid valves on the right). Valve problems may be congenital or acquired. In Pakistan the leading valvular heart disease like any other developing country is rheumatic heart disease with a prevalence of 0.6%.

Objective: The objectives of study were to find out the prevalence of valvular heart disease in our local adolescent and adult patients admitted in cardiac surgery ward and to assess the spectrum of various valvular pathologies in terms of age, gender, type and clinical presentation of valvular heart disease among patients.

Material and Methods:

Study Design: Cross sectional study

Study setting: Cardiovascular surgery department of Jinnah Hospital Lahore and PIC.

Study duration: 6-8 months

Sample selection: Age 13-75 years of either gender were included with history of CHD.

Data Collection and Analysis Procedure: 120 subjects admitted in cardiac surgery unit were prospectively enrolled for the study after approval of ethical review board and informed consent will be taken. Data was be entered and analyzed in SPSS Ver. 17.0. Numerical variables like age, duration of disease were presented as mean and standard deviation; Qualitative variables like gender, symptoms and types of valular heart disease were presented as frequency and percentages.

Results: Mean age of subjects were 31 years, 63% were males and 37% were females, 28% subjects had final diagnosis of mitral valve stenosis,17% had prosthetic valve endocarditis,9% had mitral valve regurgitation,9% had aortic valve regurgitation and 8% had infective endocarditis,65% were on conservative/medical treatment and 35% were treated both medically and surgically.

Conclusions: Mitral Valve Stenosis and regurgitation is most common valvular heart disease among patients. Infective Endocarditis among prosthetic valve is second most common reason for admission. Most of patients are well managed conservatively with drugs.

Key words: Valvular heart disease, prevalence, adolescent, spectrum.

Heart valve disease is a significant and increasing global problem. It is a disease process involving one or more of the valves of the heart(the aortic and mitral valves on the left and the pulmonary and tricuspid valves on the right). Valve problems may be congenital or acquired. As a result of different pathologic conditions there can be valvular stenoses and regurgitation. Treatment may be with medication but often depending on the severity involves artificial valve replacement. Specific situations include those where additional demands are made on the circulation, such as in pregnancy.[1]

Valvular heart disease remains common in industrialized countries, because the decrease in prevalence of rheumatic heart diseases has been accompanied by an increase in that of degenerative valve diseases. Aortic stenosis and mitral regurgitation are the two most common types of valvular disease in Europe. The prevalence of valvular disease increases sharply with age, owing to the predominance of degenerative etiologies. The

burden of heart valve disease in the elderly has an important impact on patient management, given the high frequency of comorbidity and the increased risk associated with intervention in this age group. Endocarditis is an important etiology of valvular disease and is most commonly caused by Staphylococci. Rheumatic heart disease remains prevalent in developing countries.[16]

Acute rheumatic fever (ARF) is a post infectious, nonsuppurative sequela of pharyngeal infection with Group A β hemolytic Streptococcus (GABHS). Of the associated symptoms, only damage to the valve tissue within the heart, or rheumatic heart disease (RHD), can become a chronic condition leading to congestive heart failure, strokes, endocarditis, and death. While the incidence and prevalence of ARF and RHD have been decreasing in developed nations since the early 1900s, they continue to be major causes of morbidity and mortality among young people in developing nations. It is estimated that there are over 15 million cases of RHD worldwide, with 282,000 new cases and 233,000 deaths annually. More recent data using echocardiography to screen for RHD in developing nations have lead to a marked increase in the recognized prevalence in these regions.[2-3]

The majority of the patients of RHD present with moderate-to-severe valvular disease. Pure mitral regurgitation was the commonest valvular disease (40.2%), followed by mitral regurgitation plus aortic regurgitation (29%) The presenting clinical features of newly diagnosed patients with RHD, with particular reference to the frequency of serious complications is atrial fibrillation followed by systemic embolism, heart failure and pulmonary hypertension.[4]

Calcific aortic valve stenosis (CAVS) is an important clinical problem: 2.8% of adults over 75 years old have some degree of CAVS. 5The incidence of calcific aortic valve stenosis increases with age. Although risk factors and downstream mediators appear similar for CAVS and atherosclerosis (older age, male sex, hypertension, smoking, hypercholesterolemia, and diabetes),[6] as many as 50% of patients with CAVS do not have clinically significant atherosclerosis.[7]

Infective Endocarditis (IE) is a serious infection characterized by colonization or invasion of heart valves or the mural endocardium by a microbe.8 Recent prospective observational studies in Europe found that 47% of patients with IE had no known previous heart disease.9Intravenous drug abuses (IVDA) have the highest incidence of infective endocarditis.[10] and Staphylococcus aureus is known to be the major offender in IVDA.

Degenerative mitral valve disease is a common disorder affecting around 2% of the population.[11] The most common finding in patients with degenerative valve disease is leaflet prolapse due to elongation or rupture of the chordal apparatus, resulting in varying degrees of mitral valve regurgitation due to leaflet malcoaptation during ventricular contraction. The emphasis of clinical decision-making in patients with degenerative disease centres around the severity of regurgitation and its impact on symptom status, ventricular function and dimension, the sequelae of systolic flow reversal such as atrial dilatation/fibrillation and secondary pulmonary hypertension, and the risk of sudden death.[11-14]Due to the improved survival of children with congenital heart disease (CHD), the number of adults with CHD has increased and adult patients with CHD now outnumber children.[15]

In a landmark study done my Nkomo study found a population prevalence of moderate to severe valve disease of 8.5% in the 65–74 age group and 13% in those over 75 years. In Pakistan the leading valvular heart disease like any other developing country is rheumatic heart disease with a prevalence of 0.6%.[17]

The rationale of this study was to find out prevalence and spectrum of valvular heart disease in a tertiary care hospital setting as the burden of heart valve disease in the adolescent and elderly has an important impact on patient management, given the frequency of co morbidity and the increase in the risk

of interventions. This study will have an insight valuvular heart disease presentation that can help us in setting guidelines regarding treatment and management of such patients.

OBJECTIVES:

The objectives of study were to:

- To find out the prevalence of valvular heart disease in our local adolescent and adult patients admitted in cardiac surgery ward.
- To assess the spectrum of various valvular pathologies in terms of age, gender, type and clinical presentation of valvular heart disease among patients.

OPERATIONAL DEFINITIONS:

Valvular Heart Diseases:

These include any disease that damages the valves of the heart like

1. Calcific Aortic Stenosis
2. Rheumatic Heart Disease
3. Infective Endocarditis
4. Degenerative Mitral Valve Disease confirmed on echocardiography.

MATERIAL AND METHODS:

Study Design:

Cross sectional study

Study setting:

1. Cardiovascular surgery department of Jinnah Hospital Lahore.
2. Punjab Institute of Cardiology
3. Services Hospital Lahore.

Study duration:

6-8 months

Sample size:

Sample size calculated from win-pepi ver: 11.15

To estimate a proportion

Confidence level = 95%

Acceptable difference = 0.05

Assumed proportion = 8.5 % (Valvular Heart Disease prevalence)

REQUIRED SAMPLE SIZE = 100

Sample technique:

Non- probability / Purposive sampling technique

Sample criteria:

Inclusion criteria

- Age 13-90 years
- Both gender
- Patients confirmed as valvular heart disease on echocardiography.

Exclusion criteria:

- Patients with myocardial infarction.
- Patients with tumors of heart.
- Patients with congenital malformation e.g tetraology of fallot.

Data Collection Procedure:

120 subjects admitted in cardiac surgery unit were prospectively enrolled for the study after approval of ethical review board and informed consent. The subject's provisional and final diagnosis based on echocardiography findings were noted and detailed history regarding demographic information, onset of symptoms, first diagnosis of diseases and treatment history was taken. All the information was entered in a structured Questionnaire.

Data Analysis Procedure:

Data was entered and analyzed in SPSS Ver: 17.0. Numerical variables like age, duration of disease were presented as mean and standard deviation, Qualitative variables like gender, symptoms, types of valular heart disease were presented as frequency and percentages. Prevalence will calculated by total number of patients with valvular heart disease divided by total patients with cardiac disease admitted at time of data collection.

RESULTS:

Mean age of subjects were 31 years(Table no:1).60% of subjects age were in range of 20-40 years,20% subjects age were in 13-19 year and 17% were in 41-60 years age range(Table no:2).63% were males and 37% were females(Table no:3).57%

subjects were married and 43% were single (Table no:4). 54% of subjects lived in rural areas and 46% lived in urban areas(Table no:5).36% had attended primary school,28% were illiterate and 24% had attended secondary school (Table no:6).44% were farmer/laborer,23% were unemployed,17% were housewives and 14% were students (Table no:7). 36% of subjects had their provisional diagnosis as mitral valve disease, 18% had post mitral valve replacement and 11% had aortic valve regurgitation (Table no:8). 28% subjects had final diagnosis of mitral valve stenosis,17% had prosthetic valve endocarditis,9% had mitral valve regurgitation, 9% had aortic valve regurgitation and 8% had infective endocarditis (Table no:9). Auscultation findings showed that 30% subjects had mid-diastolic murmur, 18% had diastolic murmur, 13% had normal S1 + S2 and 12% had systolic murmur (Table no:10). On echocardiography it was found that 32% had pliable mitral valve,19% had normally functioning prosthetic valve,11% had aortic regurgitation and 7% had mitral regurgitation (Table no:11). 65% were on conservative/medical treatment and 35% were treated both medically and surgically (Table no:12).

Table 1: *Age of Subjects*

N	Valid	100
	Missing	0
	Mean	31.22
	Median	27.50
	Mode	25
	Std. Deviation	12.815
	Minimum	13
	Maximum	68

Table 2: *Age of Subjects*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	13-19	20	20.0	20.0	20.0
	20-40	60	60.0	60.0	80.0
	41-60	17	17.0	17.0	97.0
	61-80	3	3.0	3.0	100.0
	Total	100	100.0	100.0	

Table 3: *Gender of Subjects*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	63	63.0	63.0	63.0
	Female	37	37.0	37.0	100.0
	Total	100	100.0	100.0	

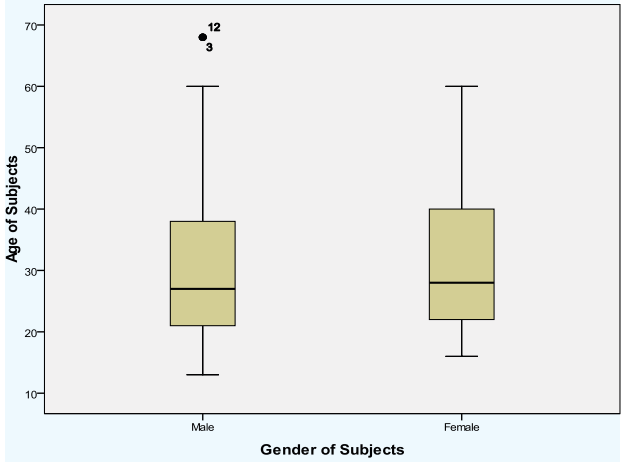

Table 4: *Marital Status of subjects*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	43	43.0	43.0	43.0
	Married	57	57.0	57.0	100.0
	Total	100	100.0	100.0	

Table 5: *Residential status of subjects*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rural	54	54.0	54.0	54.0
	Urban	46	46.0	46.0	100.0
	Total	100	100.0	100.0	

Table 6: *Education status of Subjects*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Illiterate	28	28.0	28.0	28.0
	Formal/Islamic / Primary	36	36.0	36.0	64.0
	Up to Metric	24	24.0	24.0	88.0
	Bachelor	11	11.0	11.0	99.0
	Masters and above	1	1.0	1.0	100.0
	Total	100	100.0	100.0	

Table 7: *Occupation status of subjects*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Unemployed / nonfunctional	23	23.0	23.0	23.0
	Student	14	14.0	14.0	37.0
	Housewife	17	17.0	17.0	54.0
	Blue collar (manual laborer, worker, farmer)	44	44.0	44.0	98.0
	White Collar (office work)	2	2.0	2.0	100.0
	Total	100	100.0	100.0	

Table 8: *Provisional Diagnosis*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Mitral Valve Disease	36	36.0	36.0	36.0
	Mitral Valve Regurgitation	4	4.0	4.0	40.0
	Aortic Valve Regurgitation	11	11.0	11.0	51.0
	Post Aortic Valve Replacement	6	6.0	6.0	57.0
	Pulmonary Valve Regurgitation	1	1.0	1.0	58.0
	Rheumatic Heart Disease	6	6.0	6.0	64.0
	Post Mitral Valve Replacement	18	18.0	18.0	82.0
	Post Pulmonary Valve Replacement	6	6.0	6.0	88.0
	Infective Endocarditis	5	5.0	5.0	93.0
	Aortic Stenosis	1	1.0	1.0	94.0
	Tricuspid Regurgitation	5	5.0	5.0	99.0
	Aortic Calcific Stenosis	1	1.0	1.0	100.0
	Total	100	100.0	100.0	

DISCUSSION:

The etiology of valvular heart diseases (VHD) has changed in the last 50 years in the industrialized countries. A significant reduction in the incidence of rheumatic fever and its sequelae, increase in life expectancy, recognition of new causes of VHD and advancement in technology are responsible for the metamorphosis of the etiology of VHD. Heritable disorders of connective tissue (marfan syndrome,

Table 9: *Final Diagnosis*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Mitral Valve Stenosis	28	28.0	28.0	28.0
	Mitral Valve Regurgitation	9	9.0	9.0	37.0
	Aortic Valve Regurgitation	9	9.0	9.0	46.0
	Post Aortic Valve Replacement	5	5.0	5.0	51.0
	Rheumatic Heart Disease	5	5.0	5.0	56.0
	Prosthetic Valve Endocarditis	17	17.0	17.0	73.0
	Post Pulmonary Valve Replacement	7	7.0	7.0	80.0
	Infective Endocarditis	8	8.0	8.0	88.0
	Aortic Stenosis	2	2.0	2.0	90.0
	Tricuspid Regurgitation	5	5.0	5.0	95.0
	Aortic Calcific Stenosis	1	1.0	1.0	96.0
	RHD e Mitral & Aortic regurgitation	4	4.0	4.0	100.0
	Total	100	100.0	100.0	

Table 10: *Auscultation findings*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Mid-diastolic Murmur	30	30.0	30.0	30.0
	Diastolic Murmur	18	18.0	18.0	48.0
	Pan systolic Murmur	9	9.0	9.0	57.0
	Metallic Sound	3	3.0	3.0	60.0
	Normal S1 + S2	13	13.0	13.0	73.0
	Loud S1 + S2	3	3.0	3.0	76.0
	S1 + S2 + Prosthetic Valve Sound	6	6.0	6.0	82.0
	Systolic Murmur	12	12.0	12.0	94.0
	S1 + S2 + Prosthetic Valvular Regurgitation	1	1.0	1.0	95.0
	Muffled S1 + S2 +P2 Loud	2	2.0	2.0	97.0
	S3 Gallop	3	3.0	3.0	100.0
	Total	100	100.0	100.0	

Table 11: *Echocardiography findings*

	Frequency	Percent	Valid Percent	Cumulative Percent
Pliable Mitral Valve	32	32.0	32.0	32.0
Aortic Regurgitation	11	11.0	11.0	43.0
Mitral Regurgitation	7	7.0	7.0	50.0
Aortic Valve Paravalvular Leak	5	5.0	5.0	55.0
Pulmonary Hypertension	2	2.0	2.0	57.0
Normally Functioning Prosthetic Valve	19	19.0	19.0	76.0
Abnormally Functioning Prosthetic Valve	2	2.0	2.0	78.0
Calcified Aortic valve	1	1.0	1.0	79.0
Vegetations on Valve Leaflets	4	4.0	4.0	83.0
Aortic Stenosis	1	1.0	1.0	84.0
Tricuspid Regurgitation	5	5.0	5.0	89.0
Degenerative Disease	2	2.0	2.0	91.0
Calcified Mitral Valve	1	1.0	1.0	92.0
Mitral Stenosis with Calcification	3	3.0	3.0	95.0
Aortic & Mitral Regurgitation	5	5.0	5.0	100.0
Total	100	100.0	100.0	

Table 12: *Treatment*

	Frequency	Percent	Valid Percent	Cumulative Percent
Conservative / Medical (diuretics, digoxin, anti-platelets)	65	65.0	65.0	65.0
Conservative / Medical & Surgical Treatment	35	35.0	35.0	100.0
Total	100	100.0	100.0	

Ehlers-Danlos syndrome, adult polycystic kidney disease, floppy mitral valve/mitral valve prolapse); congenital heart disease (bicuspid aortic valve); inflammatory/immunologic disorders (rheumatic fever, AIDS, Kawasaki disease, syphilis, seronega-tive spondyloarthropathies, systemic lupus erythematosus, antiphospholipid syndrome); endocardial disorders (nonbacteremic thrombotic endocarditis, infective endocarditis, endomyo-cardial fibroelastosis); myocardial dysfunction (ischemic heart disease, dilated cardiomyopathy, hypertrophic cardiomyopathy); diseases and disorders of other organs (chronic renal failure, carcinoid heart disease); aging (calcific aortic stenosis, mitral annular calcification); post interventional valvular disease; drugs and physical agents are all clinical entities associated with VHD. It should be emphasized that VHDs still constitute a major health problem which will increase with the aging population.[18]

A study done on Clinical spectrum of chronic rheumatic heart disease in India showed Mitral regurgitation was the single most common lesion (n = 1,007) in group I, while the dominant lesion in group II was mitral stenosis (n = 2,943). Isolated aortic valve disease was seen in 130 (4.5%) and 195 (2.8%) cases in groups I and II, respectively. Tricuspid stenosis was seen in 45 cases, and rheumatic involvement of all four cardiac valves was documented in four cases. Pulmonary hypertension was present in 42.4% and 80.8% in groups I and II, respectively, and functional tricuspid regurgitation in 38.9% and 77.2%, respectively. Overall, 5.9% of patients had atrial fibrillation, 0.9% had left atrial thrombus (seen on transthoracic echocardiography) and 0.4% had embolic cerebrovascular events. Pericardial effusion was present in 0.7% cases, and infective endocarditis was noted at presentation in 0.6%.[19]

In our study mean age of presentation was 31years, 60% of subjects age were in range of 20-40 years, 20% subjects age were in 13-19 year and 17% were in 41-60 years age range(Table no:2).63% were males and 37% were females(Table no:3), Majority 28% subjects had final diagnosis of mitral valve stenosis,17% had prosthetic valve endocarditis, 9% had mitral valve regurgitation, 9% had aortic valve regurgitation and 8% had infective endocarditis (Table no:9). Majority of subjects 65% were on conservative/medical treatment and 35%were treated both medically and surgically(Table no:12).

In another study on vavular heart disease the mean age at presentation was 9 years. In 31 (37%) cases, arthritis was the only major Jones criterion.

In 30(36%) others, arthritis was associated with carditis and in 3(4%), with chorea. Cardiac involvement was documented in 44 (53%) cases; it occurred alone in 5 (6%), with arthritis in 30 (36%), and with chorea in 9(11%) others. Among the 44 with carditis, the pattern of cardiac involvement was valvular only (mild carditis) in 30 (68%), while it was severe in the remaining 14 (32%) cases who also had heart failure. The involvement of the mitral valve alone occurred in 26 (59%) cases in the form mitral regurgitation, while both aortic and mitral valve regurgitation were present in 11 (25%) cases, and aortic valve regurgitation alone in four (9%) others. Chorea was the only major criterion of ARF in 5 children (6%), while it occurred in association with other major criteria in 12 (15%) others. Nineteen (23%) children had recurrent attacks of ARF.20

CONCLUSION:

The conclusion of our study is:

- Mitral Valve Stenosis and regurgitation is most common valvular heart disease among patients.
- Infective Endocarditis among prosthetic valve is second most common reason for admission.
- Valvular heart diseases subjects seeking treatment are mostly adolescent and young adults.
- Most of patients are well managed conservatively with drugs.

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PREVALENCE OF CULTURAL SHOCK FOR FOREIGNERS COMING TO PAKISTAN

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ABSTRACT

Background: Recently there has been a major increase in population mobility and increasing pace of globalization. When individuals relocate to an environment vastly different from their own, they often experience cultural shock.1We were also interested to know about the cultural shock experienced by students coming to our country-Pakistan. Objective: To investigate the prevalence of cultural shock in the foreigner students of Allama Iqbal Medical College and how safe the foreigners actually feel in Pakistan.

Materials and Methods:

Study design: Cross-sectional study design.

Study setting: Carried out in Allama Iqbal Medical College, Lahore.

Duration of study: 4 months from 1st April to 31st July 2014.Sample size:100 foreign medical students of which 10 students were from each class.

Sampling technique: Purposive /convenient sampling.

Sample selection: Medical students of Allama Iqbal Medical College belonging to 1st, 2nd, 3rd, 4th, and 5th year of medical education.

Data collection procedure: A self-designed questionnaire was provided to each student containing questions related to the emotional experience that students had, the reasons which lead them to feel uncomfortable on campus, the stages of cultural shock that they went through and the time it took to actually adapt to the new environment.

Data analysis: Data was entered and analyzed in SPSS Version: 17.0.

Results: Out of 100 students that were included, 65% were male. 85% had lived in Pakistan for 2-4 years, 68% were excited when they came to Pakistan, 70% had complaints about Language, people dealing, the pace of life, and issues about food, 20 percent believed that they had no negative feelings and out of them 50% based it on their strong personality, 26% took less than 6 months to adopt the new lifestyle, 50% had felt that the local people had accepted them, 10% felt like they wanted to escape from this new environment, 78% had most of their friends from the same home country, 83% felt no fear when going back to their home country from Pakistan.

Conclusion: All the foreigner students in research underwent cultural shock and a majority of them were in adaptation phase (stage 4).Most of them were males and were excited. Most of them had complained of food, language and dealing with local people. The majority of them did not wish to escape from their new environment.

Key Words: Cultural shock, coping and stress, cultural identity, adaptation, complain

Cultural shock is a term that includes various phenomena following impact between a person of a certain cultural background and a relatively strange culture.[2] Culture shock has many definitions based on an individual's own experience. Many people believe that this term should be removed since the world is becoming more globalized and everyone knows the culture of many countries due to media. However, as Thomas (2001) says, the boundaries of cultural differences will

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always exist.[3] A definition of culture shock is in the Dictionary of Language Teaching & Applied Linguistics, and it is defined as "strong feelings of discomfort, fear, or insecurity, which a person may have when they enter another culture". An example is when a person moves to live in a foreign country, they will experience a period of culture shock.[4] Adler defined cultural shock as a set of emotional reactions to the loss of perceptual reinforcements from one's own culture, to new cultural stimuli which have little or no meaning, and to the misunderstanding of new and diverse experiences.[5] Oberg stated that it is "the psychological disorientation experienced by people who suddenly enter radically different cultural environments to live and work."[6] Kealey said: it is not the new culture or environment itself that causes the upset. Rather it is oneself in contact with the new environment that creates the physical/emotional upset.[7]

Culture shock has three basic casual explanations that lead to the uncomfortable feelings which are referred to it. These are the loss of familiar cues, the breakdown of interpersonal communications, and an identity crisis.[8] We depend on these cues for peace of our mind and efficiency and most of them are no carried out on a level of conscious awareness.[9] Not only do the foreigners suffer academic stressors but also problems related to language, racial discrimination, accommodation difficulties, financial stress, dietary problems and so on.[10] However, the effects of cultural shock are not all negative? Some of the positive experiences that a person can gain through cultural shock are learning experience, increase intercultural understanding, ethnocentrism < ethnorelativism (better), and enhancement of self-efficacy.[11]

"Culture shock," has been divided into 5 stages. Each stage appears at particular times. In the first stage of culture shock, you may feel euphoric and happy by all of the new things you see or encounter. It is known as "honeymoon" stage. The natives are gracious, welcoming and polite.[12] After it is the second stage in which one may come after some difficulties and hard times. In this stage, there may be feelings of anger, frustration, and sadness. The activities of daily living that had been previously taken for granted become insurmountable problems.[13] The third stage involves gradual acceptance of the new culture and the returning of person's sense of well-being.[14] It is called adjustment phase This makes you happy, gain pleasure and helps you gain some psychological stability. You are more familiar with the environment you are living in. In the fourth stage, people have mastered the art of how to solve their problems and manage new culture successfully. In this stage, majority of symptoms of cultural shock have disappeared.[15] The fifth stage is called the "reverse cultural shock."It is the process of readjusting, re-acculturating, and reassimilating into one's own home culture after living in a different culture for a significant period of time.[16] This occurs when you return to your home country either because you are adapted to host country culture so that when you return to origin country you find everything somewhat unfamiliar because of prolonged detachment. Secondly, the culture and traditions are no longer the same in a country when you came back. They may have evolved, regressed or modified. This again gets somewhat shocking for you.[17]

Each person has their own way of reacting to these stages of cultural shock due to which some stages will be difficult and perhaps longer compared to other stages. Sometimes an individual who is experiencing cultural hock may not accept the ways of the host country and as a result after the frustration stage may become depressed and may commit destructive actions. An example of these actions is depending on drugs, skipping classes, aggression etc.

There are many ways to fight cultural shock and majority of individuals have the ability to positively face the challenges of a new environment. Cultural shock can be minimized by identifying the problem that affects one and using the resources necessary to cope up with problems.[18] This can be done for

example by developing a hobby, not forgetting the good things you already have, by including a regular form of physical activity in daily routine such as exercise, swimming etc. This constructive approach helps to counter sadness and loneliness. If one feels stressed, he should look for help. There is always someone or some service available to help.[19] Keeping all of the background information in check this research paper will deal with the cultural shock that is felt by the foreigners that are coming to Pakistan.

OBJECTIVE:

The objective of this study was to investigate the prevalence of cultural shock in the foreigner students of Allama Iqbal Medical College and how safe the foreigners actually feel in Pakistan.

OPERATIONAL DEFINITION:

Cultural Shock has the following stages:

Stage 1 **Honeymoon or tourist phase:** During this period the differences between the old and new culture are seen in a romantic light – they're wonderful, new and exciting. For example, when moving to a new country, new foods, the pace of life, the architecture of this new place might influence an individual.

Stage 2 **the crises phase:** This phase starts with a series of increasing problems or a full blown problem, negative experiences and negative reactions. Typical features include: things start to go wrong, minor issues become major problems and cultural differences become irritating. A major aspect of culture shock and the resultant stress is cognitive fatigue a consequence of an “information overload”.

Stage 3 **the adjustment phase:** In this phase, one accepts the new culture with a positive attitude and starts to develop skills to cope up with problems. This helps to resolve the issues necessary to function in the new culture.

Stage 4 **the adaptation phase:** In this phase, one gets habitual of the new culture and routines. The individual knows what to expect in most situations and thus the host country no longer feels all that new. One becomes concerned with basic living again, and things become more "normal". As a result please answer the questions to the best of your honesty and ability.

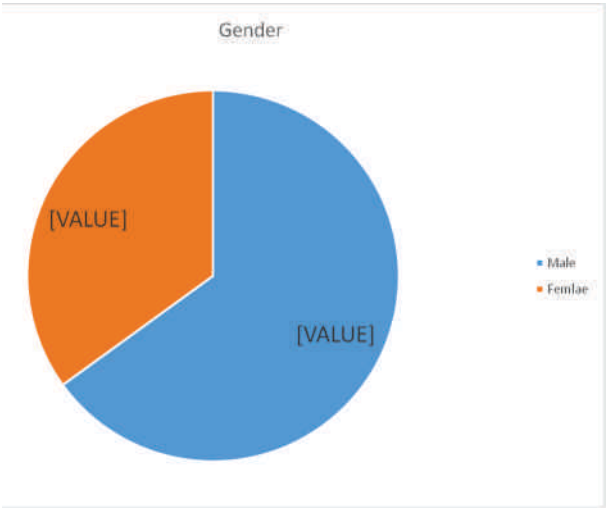
MATERIALS AND METHODS:

Across-sectional study was designed in Allama Iqbal Medical College, Lahore from 1st April to 31st July 2014. Sample people consist of 100 foreign medical students of which 10 students were from each class through apurposive/convenient sampling. All Medical students of Allama Iqbal Medical College belonging to 1st, 2nd, 3rd, 4th, and 5th year of medical education are included in this research. The students who were agreed to participate were asked to sign informed consent. A self-designed questionnaire consisting of open and close ended questions were provided to each student. The questionnaire contains questions relating to the emotional experience that students had when they came to medical college. Other questions include their development after having the cultural shock. Also, the reasons were noted which lead the foreigner students to feel uncomfortable in Allama Iqbal Medical College. Also, the foreigner students were asked questions about the stages that they progressed through after experiencing cultural shock. The total time it took for the students to actually adapt to their new environment was also be asked. The students were guided as for how to fill the questionnaire and were assured that their responses would be treated with utmost confidentiality. Data was entered and analyzed in SPSS Version: 17.0. Mean and the standard deviation was calculated for numerical variables like the number of people experiencing the cultural shock in the different years of MBBS in Allama Iqbal Medical College. Qualitative variables were presented as frequencies, percentages and quantitative variables as mean and standard deviation

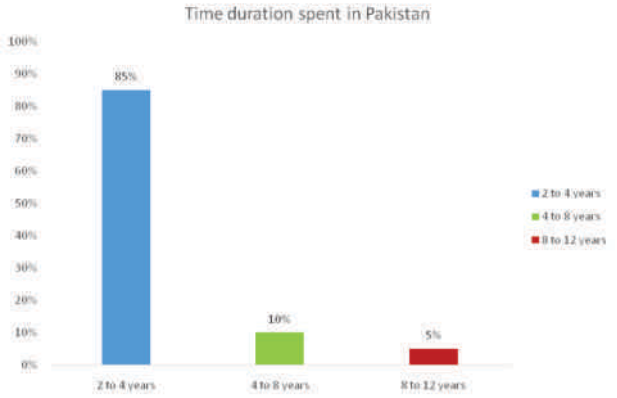
RESULTS:

In our research, we included 100 students following our inclusion criteria. The data in Table 1 shows that most foreigners do undergo the 4 stages that are written in the Performa. Also, about 35 percent of the population is also still present in adjustment stage. In Graph 1, 65% of the foreigners

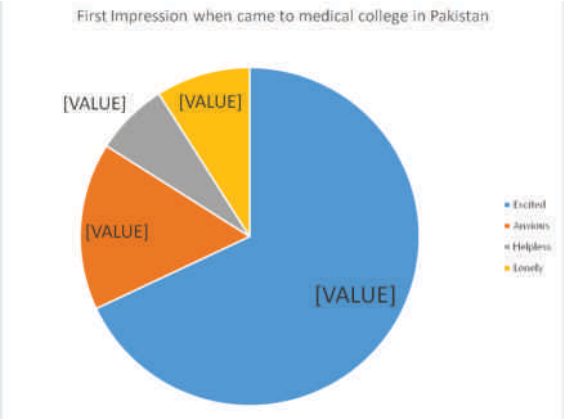
are male, while 35% are females. In Graph 2 it shows that 85% of the population has lived in Pakistan for 2-4 years, while much less percentage has lived longer in Pakistan. The Graph 3 shows that 68% of these people when they came to Pakistan were excited. In Graph 4, overall 70% of the complaints are about Language, people dealing, the pace of life, and also have issues with food. In Table 2, about half of the foreigners call home as the source of their comfort when things become too tough for them. They also go out with friends that have come from their home country. In Table 3, only 20 percent of the foreigners believe that they had no negative feelings and out of them 50% base it on their strong personality. In Table 4, 26 % foreigners took less than 6 months to adopt the new lifestyle. In Table 5, 50% of the foreigners feel that the local people accept them and do not feel left out. Also, only 10% of foreigners really feel like they want to escape from this new environment. In Graph 5, 78% of the foreigners have most of their friends from the same home country. In Table 6, 83% of the foreigners feel no fear when going back to their home country from Pakistan.



Graph 1: Gender of subjects



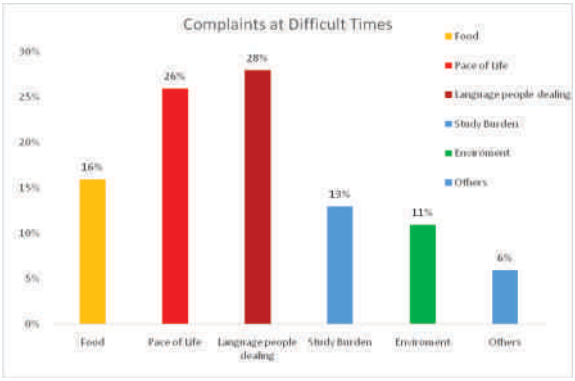
Graph 2: Time Spent in Pakistan



Graph 3: First Impression

Table 1: *Current and experiences stages of shock by students*

	Current stage of cultural shock	
Stages	**Frequency**	**Percent**
honeymoon stage	22	22.0
crisis stage	25	25.0
adjustment stage	35	35.0
adaptation stage	18	18.0
Total	100	100.0



Graph 4: Complaints

Table 2: Coping with Negative Feelings

Coping strategies	Frequency	Percent
calling home	47	47.0
going out with people from your home country	25	25.0
joining an association	13	13.0
a sports club	5	5.0
staying indoors, not going out	7	7.0
Others	3	3.0
Total	100	100.0

Table 3: Adaptation to New Culture when No Negative Feelings Present

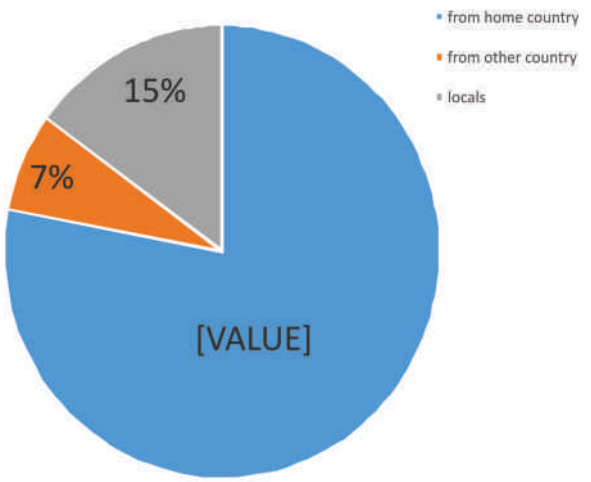
Adaptation to New Culture	Frequency	Percent
the habit of living in a culturally diverse environment	3	15.0
aspects o f your personal ity(strong personality)	10	50.0
preparation(reading books about new culture)	2	10.0
a strong community of international students	1	5.0
helpful environment	2	10.0
Others	2	10.0
Total	20	100.0

Table 4: Time Taken to Adapt

Time Taken to Adapt	Frequency	Percent
up to 1 week	18	18.0
up to 1 month	25	25.0
up to 6 months	29	29.0
up to 1 year	13	13.0
more than a year	9	9.0
still not adapted	6	6.0
Total	100	100.0

Table 5: Acceptance by Local People and Wishing to Escape from New Environment

	Acceptance by local people		Wish to escape from new environment	
	Frequency	Percent	Frequency	Percent
most of the time	50	50.0	10	10.0
Occasionally	46	46.0	6	6.0
not at all	4	4.0	84	84.0
Total	100	100.0	100	100.0



Graph 5: Origin of Friends

DISCUSSION:

Most foreigners who come to Pakistan after several months do adapt to the new lifestyle. Also, many of them spend most of their time in the adjustment stage of the cultural shock. The local people in Allama Iqbal Medical College need to start programs that allow the foreigners to quickly adjust and adapt to the new environment. An example could be to start sports club with a certain population of the foreigners. Also, a representative should be included in the student board members.

Table 6: Degree of Fear of Going Back to Home Country

	Frequency	Percent	Valid Percent	Cumulative Percent
no fear	83	83.0	83.0	83.0
very little fear	5	5.0	5.0	88.0
little fear	8	8.0	8.0	96.0
moderate fear	3	3.0	3.0	99.0
very fearful	1	1.0	1.0	100.0
Total	100	100.0	100.0	

Foreigners usually make their friends from their own home country. As a result, it creates an unwanted barrier between them and the local people. To avoid this, the local people need to be more open to the foreigners and their way of lifestyle. Also taking the advice mentioned in the above paragraph, the foreigners should start making friends with the local people. As a result, they won't feel left out and will have a say in the college decisions. The complaints that were raised by the foreigners were mostly about the language, people dealings, food,

and pace of life. In college lectures, strictly only English should be used since it is the worldwide official language. Also, the food and the mess place should be made more hygienic, so as the foreigners feel safe about the food they are consuming. There should also be a better water filtration system in the hostels. When we compare the results of our research with others, interestingly the data is quite similar. A research conducted in Al-Azhar university, Cairo, Egypt showed that most foreigners that had come to the university were Indonesians of which 45.4% had lived there for more than 1 and a half year.2085% of foreigners in our research had lived in Pakistan in between 2 to 4 years. 66.7% foreigners in Al-Azhar University had the first impression of excitement and 33.3% had anxiety. The foreigners in our research showed that 68% had the first impression of excitement and 16% of anxiety. 55.5% of foreigners in Al-Azhar University confidently said that they felt accepted by local people and 38.9% thought that they had been accepted in their new country. In our research, 86% felt that they had been accepted and 10% occasionally felt that they had been accepted. Also, 61.1% of foreigners in Al-Azhar University never had the thought of running away from their new country. Similarly, about 80% of the foreigners in our research did not have the thought of running away from Pakistan. These were many of the similarities seen in the research papers. Very few differences such as the difficulties faced by the foreigners were seen. 83.3% believed that language was the biggest difficulty to get over in Al-Azhar University, while in our research it only presented as 28%.

CONCLUSION:

All the foreigner students in research underwent cultural shock and the majority of them are in adaptation phase (stage 4). Most of them were males and were excited. Most of them had the complaint about the food, language and dealing with local people. The majority of them did not wish to escape from their new environment although they did not have the fear of going back to their home country.

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TO ASSESS THE SERUM MAGNESIUM LEVEL IN SMOKERS AND NON-SMOKERS OF ACUTE MYOCARDIAL INFARCTION

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ABSTRACT

The aim of study is to evaluate the serum magnesium level in smokers and non-smokers of acute Myocardial Infarction. Patients were selected randomly and diagnosed as the case of AMI according to WHO criteria i.e. Typical Chest pain, T wave Inversion or ST segment elevation, Increased CKMB. The patients having hypotension or renal failure are excluded from the study. Results revealed that in patients of AMI with history of smoking, serum Mg++ level was decreased as compared to patients of AMI with no history of smoking and difference was significant statistically ($p < 0.05$).

Key words: Magnesium, Smokers, acute myocardial Infarction.

Myocardial infarction is a major cause of death and disability worldwide. Acute myocardial infarction (AMI) is a clinical syndrome that results from an injury to myocardial tissue caused by prolonged ischaemia[1]. This leads to an imbalance between fractional up take of oxygen and the rate of cellular oxidation in the heart[2].

MI is one of the most common diseases diagnosed in hospitalized patients in industrialized countries. It is a growing cause of death worldwide. Sudden cardiac death occurs worldwide at a rate of 3 million per year[5].

Apart from congenital abnormalities, AMI mostly occurs as a complication of atherosclerosis[6]. AMI causes stress induced release of catecholamine which leads to lipolysis and increased concentration of free fatty acids in plasma. The free fatty acids combine with magnesium ions (Mg^{++}) and concentration of free magnesium ions falls in the blood[7].

Magnesium plays a pivotal role in many biological functions of cells. Magnesium (Mg) is the second most abundant intracellular cation and it is vital for more than 300 enzymatic reactions which are involved in various metabolic processes in the body, but still, it is often a parameter which is overlooked by the clinicians[12].

The role of Mg++ in myocardium: It helps in proper functioning of Na^+/K^+ ATPase pump. The functioning capability of pump decreases in Mg^{++} deficiency and results in increased concentration of Na^+ inside the cell along with decreased concentration of K^+ inside[9].

This increased concentration of Na^+ in the interior affects Na^+/Ca^{++} counter transport pump. This pump normally throws Na^+ in and Ca^{++} out, but the ionic gradient for Na+ will not allow this pump to cause influx of Na^+, resulting in increased concentration of Ca^{++} inside the cell.

Magnesium ions compete with Ca^{++} for the same channel. In Mg^{++} deficiency Ca^{++} entry will remain unchecked, therefore, Mg^{++} deficiency in AMI results in:

a) Increased concentration of Na+ inside the cell, causes increase in excitability, more rapid rate of depolarization, less negative potential i.e. close to the threshold potential.

b) Increased Ca^{++} concentration causes decreased refractory period facilitating re-entry, development of coupled beats, ventricular tachycardia and ventricular fibrillation[4].

As hypomagnesaemia leads to refractory potassium depletion, which contributes more towards arrhythrnias. 2 Hypomagnesaemia can

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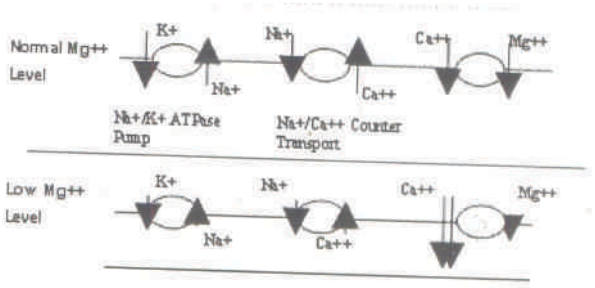
increase the concentration of catecholamine, which may intensify cardiac arrhythmias. Magnesium prolongs atrio-Ventricular (AV) nodal conduction significantly and it acts on the antegrade limb of the re-entrant circuit at the level of AV node.[2]

Myocardial Pumps: Sodium-Potassium pump(Na^+-K^+ATPase), Sodium-Calcium pump (Na^+-Ca^+ ATPase), Calcium-Magnesium pump (Ca^{++}-Mg^{++} ATPase)

Magnesium (Mg^{++}) has a number of effects that



would be expected to be useful in the treatment of acute myocardial Infarction. Magnesium inhibits platelet aggregation and platelet-dependent thrombosis, promotes vasodilatation and prevents vasospasm, and has antiarrhythmic activity. In addition, as a cofactor in the synthesis of ATP, magnesium plays a major role in myocardial energy production[1].

Magnesium deficiency is common in those with heart disease. Magnesium, a natural calcium channel blocker, is an effective treatment for heart attacks and cardiac arrhythmias. A number of studies have documented the effectiveness of intravenous magnesium in helping prevent cardiac damage and even death following a heart attack. The reason for this is that 40 – 60% of sudden deaths from heart attacks are the result of spasm in the arteries, not blockage from clots[10].

Immediately after the AMI, the serum level of Mg^{++} may be elevated. This elelvation is caused by the release of catecholamine with marked increase of Mg^{++} efflux from the heart and other tissues. There is also release of free fatty acid, the conjugation of Mg^{++} with lipid may occur resulting in dropping the level of Magnesium[11]. In hypomagnesaemia, cardiac arrhythmias, particularly torsade de pointei may occur. The diagnosis of hypomagnesemia can be confirmed by finding plasma Mg^{++} concentration less than 1.7 mg/dl. Since most Mg^{++} is intracellular, a body deficit can present with a normal plasma concentration. Up to 60% of patients with hypomagnesaemia suffer from hypokalemia and 40% will be hypocalcemic3.

METHODOLOGY:

The study was conducted in PIC Lahore.

Selection Criteria:

Patients were selected randomly and diagnosed as the cases of AMI according to WHO criteria i.e.

- Typical chest pain
- T wave inversion or ST segment elevation.
- Increased CKMB

The patients having hypotension or renal failure were excluded from the study.

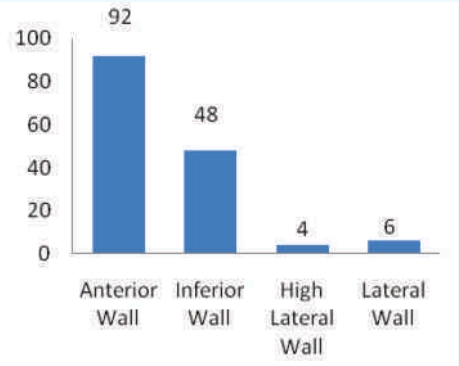
RESULTS:

The details of results are given in tables 1,2 & fig. 1,2.

Table 1: Anatomical Site of Infarction

Anterior wall	Inferior wall	H/L wall (High/Lateral)	Lateral wall	Total Subjects
92	48	4	6	150
61.33%	32.00%	2.66%	3.9%	100%

Fig. 1: Anatomical Site of Infarction



DISCUSSION:

Our study revealed that out of 150 AMI patients 38 patients (25.33%) were smokers where as 112 patients (74.67%) were non-smokers.Serum

Table 2: *Serum Magnesium levels in Smokers and Non-Smokers of AMI*

Serum Magnesium (mg/dl)	Smokers	Non-Smokers
Mean ± SD values	1.13 ± 0.08	1.32 ± 0.05
Ranges	0.7 – 2.50	0.7 – 2.30
Total Subjects	38	112

Statistical Analysis: P < 0.05 (Significant)

magnesium levels of both smokers and non-smokers AMI patients were observed and it was noted that the

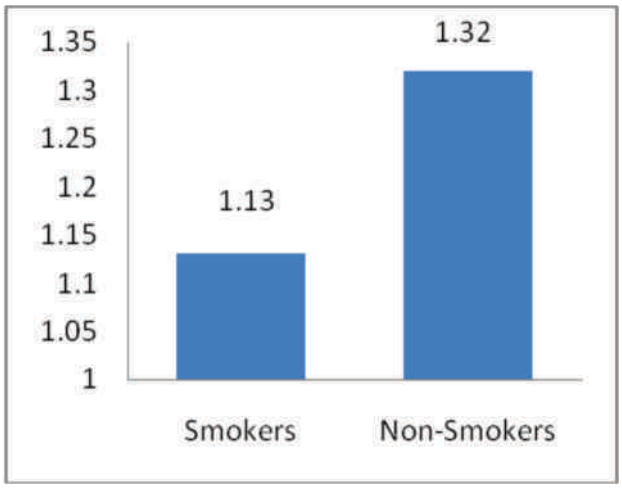


Fig. 2: *Serum Magnesium levels in Smokers and Non-Smokers of AMI*

mean serum magnesium level in smokers was 1.13±0.08 mg/dl while it was 1.32±0.05 mg/dl in non-smokers. The serum magnesium levels were low in smokers suffering from AMI as compared to the non-smokers which is in accordance with the study conducted by Khullar et al (2000)6 which states that the magnesium deficiency occurs in smokers suffering from AMI because smoking causes stress induced lipolysis that in turn decreases serum magnesium levels.

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PREVALENCE OF FROZEN SHOULDER IN DIABETIC PATIENTS

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ABSTRACT

BACKGROUND: Frozen shoulder/adhesive capsulitis consist of painful restriction of shoulder movements and results in overall decrease in mobility. it is usually idiopathic. The prevalence of frozen shoulder in diabetics is very high in Pakistan.

Objectives: To find the prevalence of frozen shoulder in diabetics.

Methods: A cross-sectional study was carried out at DMC SHL by convenience sampling method .Verbal and written informed consent was taken from the diabetic patients. The questions included demographic profile , detail of their diabetes and restriction of shoulder movement .Data analysis was done using SPSS v20.0.

Results: Among 80 diabetic patients evaluated 33 (41.3%) had frozen shoulder

Conclusions: The prevalence of frozen shoulder among diabetic patients in Pakistan is high as compared to other countries where the prevalence is 30%.

Recommendations: As the prevalence of frozen shoulder in diabetics is very much higher so it is need of hour to launch an awareness program about frozen shoulder particularly in diabetics using media, books, newspaper.

Frozen shoulder, a term coined by Codman in 1934,is a condition with symptoms of shoulder pain and discomfort that is slow in onset and located around the deltoid insertion.

Patients generally complain of an inability to sleep onthe affected side. Restricted glenohumeral elevation and external rotation, together with unremarkable radiographic findings, are also observed. The condition can be broadly divided into two categories: primary, in which there are noobvious causes, and secondary, where a cause is identified(from history, clinical examination and radiographic appearances).

Frozen shoulder mainly affects individuals 40–60 years of age, with a female predominance. The exact incidence and prevalence of frozen shoulder are unknown, but various authors have quoted figures of 2%–5% in the general population. Nevertheless, those with diabetes, prolonged shoulder immobility (trauma, overuse injuries or surgery)or systemic diseases (hyperthyroidism, hypothyroidism, cardiovascular disease or Parkinson's disease) are at a higher risk.

The relationship between adhesive capsulitis and diabetes mellitus (DM) is well documented, with the incidence of adhesive capsulitis being two

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to four times higher in diabetics than in the general population. Adhesive capsulitis affects about 20% of people with diabetes and has been described as the most disabling of the common musculo skeletal manifestations of DM. According to the National Diabetes Information Clearinghouse, the incidence of newly diagnosed diabetes cases was 1.3 million people in the United States aged 20 years and older for the year 2005. The incidence of DM and the life expectancy of the diabetic patient have increased, resulting in an increase in the prevalence of musculo skeletal complications. Early diagnosis and effective management of DM reduces the risk of micro vascular complications and manifestations of organ involvement.

The prevalence of a diabetic condition in patients with adhesive capsulitis is not well addressed. A high prevalence of a frozen shoulder would validate the need for evaluation for the presence of an undiagnosed frozen shoulder in patients with diabetes.

OBJECTIVES:

To find the prevalence of frozen shoulder in diabetics.

LITERATURE REVIEW:

Adhesive Capsulitis is the medical term for Frozen Shoulder – sometimes abbreviated to FSS (frozen shoulder syndrome). This is a condition which affects the ability to move the shoulder, and usually only occurs on one side. Sometimes the problem can spread to the other shoulder (approximately 1 person in 5).

The medical term literally describes what is seen in this condition – adhesive meaning sticky, and capsulitis meaning inflammation of the joint capsule. It is thought that a lot of the symptoms are due to the capsule becoming inflamed and 'sticking', making the joint stiff and difficult to move.

Frozen Shoulder is extremely uncommon amongst young people, and is almost always found in the 40 + age group, usually in the 40-70age range. Approximately 3% of the population will be affected by this, with slightly higher incidence amongst women,.[1]

Diabetes is a risk factor for frozen shoulder. Frozen shoulder has five times higher prevalence in diabetics[1] Although precisely why that's so is a subject the medical community is still researching. One theory involves collagen, one of the building blocks of ligaments and tendons. Collagen is a major part of the ligaments that hold the bones together in a joint. Glucose (sugar) molecules attach to collagen. In people with diabetes, the theory goes; this can contribute to abnormal deposits of collagen in the cartilage and tendons of the shoulder. The buildup then causes the affected shoulder to stiffen up.[2] The total prevalence of diabetes in patients with frozen shoulder is 71.5%[3]

Overall, frozen shoulder affects about 30 percent of people with diabetes, compared with 5 per cent of people without diabetes. Patients who sustain a shoulder injury, or undergo surgery on the shoulder can develop a frozen shoulder joint. When injury or surgery is followed by prolonged joint immobilization, the risk of developing a frozen shoulder is highest.[4]

A research was conducted to check effect of glycaemic control on frozen shoulder in southern California USA in 2007.There were 1150 diabetic patients with a diagnosis of frozen shoulder. There was no significant relationship between HbA1c level and the prevalence of frozen shoulder. And finally the conclusion was that there was no association found between HbA1c level and the prevalence of frozen shoulder in this diabetic population [5]

Exercise has no effect on prevalence but has a vast role in treatment of frozen shoulder. The patients who were treated with exercise techniques regularly have a better prognosis of frozen shoulder[6]

Exercise is not only used for reducing the prevalence of frozen shoulder but is also used as a treatment plan for frozen shoulder and the best

technique being currently used is Neil Asher Technique. It is a unique combination of exercises and pressure techniques, stimulates a new pathway in the brain, rapidly relieving injury and spasm and increasing strength and power[5]

Frozen shoulder is itself not related to inheritance but its incidence in diabetes is higher which is a hereditary disease. Some authors implicate genetic factors in its aetiology[7] but others could not confirm such assertions[8] an increased frequency of HLA-B27 in patients with frozen shoulder was reported [9] but such an association was not substantiated.

The mode of medication taken by diabetic patients also affects prevalence of frozen shoulder. The frequency of frozen shoulder was almost twice as high in insulin-dependent patients than non-insulin-dependent diabetic patients. The incidence of frozen shoulder was also higher in those taking oral hypoglycemic drugs than those who were not[10]. Insulin-dependent patients who used or did not use oral hypoglycemic were 1.93 times more likely than non-insulin-dependent diabetic patients to have frozen shoulder, and that rate increased to 1.96 times more likely when the results were adjusted for HbA1c level. Patients who were taking oral hypoglycemic drugs were 1.5 times more likely to develop frozen shoulder than those who did not use insulin or take oral hypoglycemic drugs.[5]

Prevalence of frozen shoulder is also affected by duration of diabetes. It was also more common for those who had diabetes for 10 or more years[11] Duration of diabetes was also associated with the development of frozen shoulder, after controlling for insulin use (odds ratio: 1.85 for duration of more than ten years of use compared with less than five years of use). The prevalence of end-stage diabetic manifestations was increased in patients with frozen shoulder as compared with those without frozen shoulder ($p < 0.0001$). [5]

METHODOLOGY:

STUDY DESIGN:

The study was a Descriptive Cross Sectional form of study.

STUDY DURATION:

1.5 month

STUDY AREA:

The research was conducted in the Diabetic Management Centre SHL.

The DMC SHL is one of the best and reknown diabetic centre in Pakistan where atleast 200 diabetic patients are supervised daily.

STUDY SUBJECTS:

The diabetic patients coming to DMC and willing to participate.

Inclusion Criteria:

- Diabetic patients of both sexes.
- Patients above 18 years of age.

Exclusion Criteria:

- Patients of frozen shoulder having traumatic history.
- Children below 18 years of age

DATA COLLECTION METHOD:

The data was collected by employing the "Questionnaire" technique.

ETHICAL CLEARANCE.:

All the subjects were explained the purpose and the process of study. They were explained the benefits of study and assurance was given to protect the life, health ,privacy and dignity of human study subjects.

SAMPLING:

- **SAMPLE SIZE:**

  The sample size was 80.(Epi Info program).

- **SAMPLING TECHNIQUE:**

Samples were collected by the "Non Probability Convenience Method"; all people falling under the inclusion criteria were included over the research period until the sample size was achieved.

DATA MANAGEMENT AND ANALYSIS PLAN:

SPSS version 20 was used to tabulate and

manage the data.

VARIABLES:

INDEPENDENT VARIABLES:

1. Age
2. Sex
3. mode of medication
4. Exercise
5. Glucose level.
6. Time since diabetes.

DEPENDENAT VARIABLES:

1. Pain during movement of shoulder.
2. Restriction during shoulder movement.
3. Stage of frozen shoulder.
4. Unilateral or bilateral pain and restriction

Definitions:

1. **Prevalance:** The number of cases of a specific disease in a given population at a certain time.
2. Frozen shoulder:(adhesive capsulitis) is a disorder in which the shoulder capsule, the connective tissue surrounding the glenohumeral joint of the shoulder, becomes inflamed and stiff, greatly restricting motion and causing chronic pain.

RESULT:

According to our data and statistics the following results are being concluded.

Table 1: *Frequency distribution of age and sex of diabetic patients*

AGE			sex of diabetic patients		Total
			male	female	
age of diabetic patients	18-40	Count	4	7	11
		% within sex of diabetic patients	10.5%	16.7%	13.8%
	41-60	Count	23	33	56
		% within sex of diabetic patients	60.5%	78.6%	70.0%
	61-80	Count	11	2	13
		% within sex of diabetic patients	28.9%	4.8%	16.2%
Total		Count	38	42	80
		% within sex of diabetic patients	100.0%	100.0%	100.0%

Table 2: *Frequency distribution of time since diabetes.*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<1year	9	11.3	11.3	11.3
	<5year	17	21.3	21.3	32.5
	<10year	28	35.0	35.0	67.5
	>10year	26	32.5	32.5	100.0
	Total	80	100.0	100.0	

Table 3: *Frequency distribution of mode of treatment of diabetic patients*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Oral	50	62.5	62.5	62.5
	insulin	30	37.5	37.5	100.0
	Total	80	100.0	100.0	

Table 4: *Frequency distribution of control of glucose level of diabetic patients from past 3 months*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Control	43	53.8	53.8	53.8
	uncontrolled	37	46.3	46.3	100.0
	Total	80	100.0	100.0	

Table 5: *Frequency distribution of pain during movement of shoulder of diabetic patients*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	33	41.3	41.3	41.3
	No	47	58.8	58.8	100.0
	Total	80	100.0	100.0	

Table 6: *Frequency distribution of unilateral or bilateral shoulder pain of diabetic patients*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Unilateral	47	58.8	58.8	58.8
	Bilateral	21	26.3	26.3	85.0
	Total	12	15.0	15.0	100.0
		80	100.0	100.0	

Table 7: *Frequency distribution of restriction during shoulder movement of diabetic patients*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	47	58.8	58.8	58.8
	Yes	33	41.3	41.3	100.0
	Total	80	100.0	100.0	

Table 8: *Frequency distribution of level of restriction of shoulder movement of diabetic patients*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		47	58.8	58.8	58.8
	upto shoulder	16	20.0	20.0	78.8
	above shoulder	17	21.3	21.3	100.0
	Total	80	100.0	100.0	

Table 9: *Frequency distribution of daily exercise of diabetic patients*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	46	57.5	57.5	57.5
	No	34	42.5	42.5	100.0
	Total	80	100.0	100.0	

Table 10: *Frequency distribution of inheritance of frozen shoulder of diabetic patients*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	35	43.8	43.8	43.8
	No	45	56.3	56.3	100.0
	Total	80	100.0	100.0	

Table 11: *Frequency distribution of stage of frozen shoulder of diabetic patients*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		47	58.8	58.8	58.8
	stage 1	20	25.0	25.0	83.8
	stage 2	13	16.3	16.3	100.0
	Total	80	100.0	100.0	

Table 12: *Frequency distribution of age of diabetic patient according to pain during movement of shoulder*

			pain during movement of shoulder		Total
			yes	No	
age of diabetic patients	18-40	Count	4	7	11
		% within pain during movement of shoulder	12.1%	14.9%	13.8%
	41-60	Count	26	30	56
		% within pain during movement of shoulder	78.8%	63.8%	70.0%
	61-80	Count	3	10	13
		% within pain during movement of shoulder	9.1%	21.3%	16.2%
Total		Count	33	47	80
		% within pain during movement of shoulder	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.500[a]	2	.287
Likelihood Ratio	2.628	2	.269
N of Valid Cases	80		

a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is 4.54.

Table 13: *Frequency distribution of sex of diabetic patient according to pain during movement of shoulder*

			pain during movement of shoulder		Total
			yes	No	
sex of diabetic patients	Male	Count	9	29	38
		% within pain during movement of shoulder	27.3%	61.7%	47.5%
	Female	Count	24	18	42
		% within pain during movement of shoulder	72.7%	38.3%	52.5%
Total		Count	33	47	80
		% within pain during movement of shoulder	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	9.216[a]	1	.002		
Continuity Correction[b]	7.887	1	.005		
Likelihood Ratio	9.473	1	.002		
Fisher's Exact Test				.003	.002
N of Valid Cases	80				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 15.68.

b. Computed only for a 2x2 table

Table 14: *Frequency distribution of time since onset of diabetes according to the pain during movement of shoulder*

			pain during movement of shoulder		Total
			Yes	no	
time since onset of diabetes	<1year	Count	1	8	9
		% within pain during movement of shoulder	3.0%	17.0%	11.2%
	<5year	Count	5	12	17
		% within pain during movement of shoulder	15.2%	25.5%	21.2%
	<10year	Count	12	16	28
		% within pain during movement of shoulder	36.4%	34.0%	35.0%
	>10year	Count	15	11	26
		% within pain during movement of shoulder	45.5%	23.4%	32.5%
Total		Count	33	47	80
		% within pain during movement of shoulder	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.287[a]	3	.063
Likelihood Ratio	7.896	3	.048
N of Valid Cases	80		

a. 1 cells (12.5%) have expected count less than 5. The minimum expected count is 3.71.

Table 15: *Frequency distribution of mode of treatment of diabetic patients according to the pain during movement of shoulder*

			pain during movement of shoulder		Total
			yes	No	
mode of treatment	oral	Count	15	35	50
		% within pain during movement of shoulder	45.5%	74.5%	62.5%
	insulin	Count	18	12	30
		% within pain during movement of shoulder	54.5%	25.5%	37.5%
Total		Count	33	47	80
		% within pain during movement of shoulder	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6.963[a]	1	.008		
Continuity Correction[b]	5.780	1	.016		
Likelihood Ratio	6.974	1	.008		
Fisher's Exact Test				.011	.008
N of Valid Cases	80				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 12.38.
b. Computed only for a 2x2 table

Table 16: *Frequency distribution of control of glucose level of diabetic patients from past 3 months according to the pain during movement of shoulder*

			pain during movement of shoulder		Total
			Yes	No	
control of glucose level from past 3 months	Control	Count	13	30	43
		% within pain during movement of shoulder	39.4%	63.8%	53.8%
	Un-controlled	Count	20	17	37
		% within pain during movement of shoulder	60.6%	36.2%	46.2%
Total		Count	33	47	80
		% within pain during movement of shoulder	100.0%	100.0%	100.0 %

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.657[a]	1	.031		
Continuity Correction[b]	3.726	1	.054		
Likelihood Ratio	4.689	1	.030		
Fisher's Exact Test				.041	.027
N of Valid Cases	80				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 15.26.
b. Computed only for a 2x2 table

Table 17: *Frequency distribution of unilateral or bilateral pain of diabetic patients according to the pain during movement of shoulder*

			pain during movement of shoulder		Total
			Yes	No	
pain is unilateral or bilateral		Count	0	47	47
		% within pain during movement of shoulder	0.0%	100.0 %	58.8%
	Unilateral	Count	21	0	21
		% within pain during movement of shoulder	63.6 %	0.0%	26.2%
	Bilateral	Count	12	0	12
		% within pain during movement of shoulder	36.4 %	0.0%	15.0%
Total		Count	33	47	80
		% within pain during movement of shoulder	100.0 %	100.0 %	100.0 %

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	80.000[a]	2	.000
Likelihood Ratio	108.441	2	.000
N of Valid Cases	80		

a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is 4.95.

Table 18: *Frequency distribution of restriction during shoulder movement of diabetic patients according to the pain during movement of shoulder*

			pain during movement of shoulder		Total
			Yes	No	
restriction during shoulder movement		Count	0	47	47
		% within pain during movement of shoulder	0.0%	100.0 %	58.8%
	Yes	Count	33	0	33
		% within pain during movement of shoulder	100.0 %	0.0%	41.2%
Total		Count	33	47	80
		% within pain during movement of shoulder	100.0 %	100.0 %	100.0 %

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	80.000[a]	1	.000		
Continuity Correction[b]	75.927	1	.000		
Likelihood Ratio	108.441	1	.000		
Fisher's Exact Test				.000	.000
N of Valid Cases	80				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 13.61.
b. Computed only for a 2x2 table

Table 19: *Frequency distribution of the level of restriction of shoulder movement of diabetic patients according to the pain during movement of shoulder*

			pain during movement of shoulder		Total
			Yes	No	
level of restriction		Count	0	47	47
		% within pain during movement of shoulder	0.0%	100.0 %	58.8%
	upto shoulder	Count	16	0	16
		% within pain during movement of shoulder	48.5%	0.0%	20.0%
	above shoulder	Count	17	0	17
		% within pain during movement of shoulder	51.5%	0.0%	21.2%
Total		Count	33	47	80
		% within pain during movement of shoulder	100.0 %	100.0 %	100.0 %

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	80.000[a]	2	.000
Likelihood Ratio	108.441	2	.000
N of Valid Cases	80		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.60.

Table 20: *Frequency distribution of daily exercise in diabetic patients according to the pain during movement of shoulder*

			pain during movement of shoulder		Total
			yes	No	
daily exercise	Yes	Count	16	30	46
		% within pain during movement of shoulder	48.5%	63.8%	57.5%
	no	Count	17	17	34
		% within pain during movement of shoulder	51.5%	36.2%	42.5%
Total		Count	33	47	80
		% within pain during movement of shoulder	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.868[a]	1	.172		
Continuity Correction[b]	1.293	1	.256		
Likelihood Ratio	1.867	1	.172		
Fisher's Exact Test				.251	.128
N of Valid Cases	80				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 14.03.
b. Computed only for a 2x2 table

Table 21: *Frequency distribution of inheritance of frozen shoulder in diabetic patients according to the pain during movement of shoulder*

			pain during movement of shoulder		Total
			Yes	No	
inheritance of frozen shoulder	Yes	Count	20	15	35
		% within pain during movement of shoulder	60.6%	31.9%	43.8%
	No	Count	13	32	45
		% within pain during movement of shoulder	39.4%	68.1%	56.2%
Total		Count	33	47	80
		% within pain during movement of shoulder	100.0%	100.0 %	100.0 %

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6.485[a]	1	.011		
Continuity Correction[b]	5.372	1	.020		
Likelihood Ratio	6.533	1	.011		
Fisher's Exact Test				.013	.010
N of Valid Cases	80				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 14.44.

Table 22: *Frequency distribution of stage of frozen shoulder in diabetic patients according to the pain during movement of shoulder*

			pain during movement of shoulder		Total
			Yes	No	
stage of frozen shoulder		Count	0	47	47
		% within pain during movement of shoulder	0.0%	100.0 %	58.8%
	stage 1	Count	20	0	20
		% within pain during movement of shoulder	60.6%	0.0%	25.0%
	stage 2	Count	13	0	13
		% within pain during movement of shoulder	39.4%	0.0%	16.2%
Total		Count	33	47	80
		% within pain during movement of shoulder	100.0 %	100.0 %	100.0%

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	80.000[a]	2	.000
Likelihood Ratio	108.441	2	.000
N of Valid Cases	80		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.36.

DISCUSSION:

A research was conducted in DMC SHL on prevalence of frozen shoulder in diabetics. The purpose of this research was not only to access the prevalence of frozen shoulder but also to correlate frozen shoulder with various demographic variables like age, sex and non-demographic variables like glucose levels, time since onset of diabetes, mode of medication, exercise and inheritance. The purpose of this research was also to arrange an awareness program for frozen shoulder in diabetic population. So results of our research are:

According to international researches the prevalence of frozen shoulder is related to diabetics.

Out of 80 diabetic patients evaluated by us, 33(41.3%)had pain during shoulder movement(table no:5) while internationally it is 30.[1] The higher prevalence in Pakistan is attributed to poor socioeconomic status, late diagnosis, unawareness, lack of screening practices, inadequate glycemic control and lack of latest technologies for diagnosis of frozen shoulder.

Among 80, 47(58.8%) had restriction during movement of shoulder(table no:7). Among those who had pain during shoulder movement 4(12.1%) were of age group 18-40, 26(78.8%) were of age group 41-60, 3(9.1%) were of age group 61-80(table no:1).Chi square value was 0.2 indicating the relation insignificant.(table no:12).Internationally it is more prevalent in age 40-70 year.[1]

Among these 9(27.3%) were male and 24(72.7%) were females (table no:1). Chi square value of frozen shoulder in relation with sex was 0.002 so this relation is significant (table no:13. Frozen shoulder is 2.66 times higher in female diabetics according to our research but the female

dominance is 3% higher than men internationally[1].

Among patients having pain in shoulder 1(3%) had diabetes since <1yr,5(15.2%)had diabetes since <5yr, 12(36.4%) had diabetes since >5yr,15(45.5%) had diabetes since >10 year(table no:2) and the relation was insignificant.(table no:14). Internationally it was also more common for those who had diabetes for 10 or more years[11]

15(45.5%) diabetic patients with shoulder pain were taking oral medicine for glycemic control 18(54.5%) were taking insulin. (table no:3) Chi square is .008 indicating the relation nearly significant. (table no:15) Internationally frequency of frozen shoulder was almost twice as high in insulin-dependent patients than non-insulin-dependent diabetic patients. The incidence of frozen shoulder was also higher in those taking oral hypoglycemic drugs than those who were not [10]

Glucose level has not much significance as chi square value is 0.031 (table no:16). 13(39.4%) diabetic patients had controlled glycemic levels over last 3 months and 20(60.6%) had uncontrolled levels.(table no:4). Internationally there was no association found between HbA1c level and the prevalence of frozen shoulder in this diabetic population. [5]

Shoulder pain was unilateral in 21(63.6%) and bilateral in 12(36.4%) diabetic patients(table no:6). Chi square value is 0.000 indicating the relation significant(table no:17).

Among the diabetic patients with shoulder pain, 100% had restriction during shoulder movement (table no:7). Chi square value is 0.000 so relation is significant.(table no:18) The level of restriction was upto shoulder in 16(48.8%) and above shoulder in 17(51.5%) patients(table no:8). Chi square value is 0.000 so relation is significant.(table no:19)

Among the diabetic patients with shoulder pain 16(48.5%)did daily exercise and 17(51.5%) didn't (table no:9). Chi square value is 0.172 indicating the relation insignificant.(table no:20).Internationally exercise has no effect on prevalence[6]

20(60.6%) had frozen shoulder in their families while 13(39.4%)had no history of inheritance of frozen shoulder(table no:10). Chi square value is 0.011 so relation is insignificant. (table no:21). According to international researches frozen shoulder is itself not related to inheritance but its incidence in diabetes is higher which is a hereditary disease. Some authors implicate genetic factors in its aetiology[7] but others could not confirm such assertions[8].

Among 33 patients with frozen shoulder, 20(60.6%) had stage1 and 13(39.4%) had stage 2 of frozen shoulder(table no:11). Chi square value is 0.000 so relation is significant.(table no:22)

CONCLUSION:

STATISTICALLY SIGNIFICANT:

- Most patients of frozen shoulder were of age 40-60year.
- Prevalence among women is higher(2.66times) as compared to men.
- Most common presentation in frozen shoulder patients was unilateral.
- The 100% diabetic patients with frozen shoulder had restriction during shoulder movement with 48.8% having restriction upto shoulder and 51.5% having above shoulder.
- 60.6% patients had frozen shoulder in their family.

STATISTICALLY INSIGNIFICANT:

- Time since diabetes had no significant relation.
- Mode of treatment had not much effect on prevalence
- Control of glycemic level was also insignificant.
- Exercise was also not significantly related..

RECOMMENDATIONS:

1. Awareness program should be launched among diabetic patients at regular intervals to provide them information about increasing prevalence ,symptoms and risk factors of frozen shoulder.
2. Screening programs should be arranged among diabetics because early detection favors better cure.
3. Diabetic patients should be urged to have regular checkups as late detection of frozen shoulder worsens the condition

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MOXONIDINE - MODERATE SYSTEMIC HYPERTENSION

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ABSTRACT

We have recently concluded a nation wide post marketing study on efficacy and safety of Moxonidine in mild to moderate hypertensives. In all 97 patients were enrolled and out of these 87 completed a 12 weeks trial. There was an average drop of 12.9 mmHg in the DBP and 16.5 mmHg in SBP. 80% patient required a daily dose of 0.2 - 0.4 mg of Moxonidine for control of their BP. In 84 % of the patients completing the trial the BP changed from moderate to mild or normal or from mild too normal. The drug was well tolerated, only 2.3 % having adverse effects. We conclude that the drug studied is an effective alternate for the control of hypertension.

Systemic hypertension has emerged as one of the commonest disease of the century.

Its incidence is global and no group of population is immune to the disease. The risk of cardiovascular morbidity and mortality is directly related to the severity and duration of hypertension. In the last fifty years, various pharmacological interventions have been tried to reduce or reverse these complications with mixed results. Some of the earlier therapeutic agents like rauwalfia alkaloids and gunethidine were poorly tolerated and could not produce the desired effects. Later on a centrally acting false neurotransmitter, a-methyldopa has remained in use with limited success and because of"its poor. tolerance in males and other side effects associated with prolonged use, its use is now mostly confined to the pregnant females.

In the last thirty years there has been an explosion in the phaimacological spectrum of antihypertensive agents. Beta - blockers (BB) in the '60s', calcium channel blockers (CCB) in the '70s', angiotensin converting enzyme inhibitors (ACEI) in the '80s' and recently the angiotensin II blockers. All these drugs act mostly through a peripheral mechanism of aciton. Since "primary hypertension" is a multifactor disease in which cataecholamine may play an important therapeutic role. Experience with centrally acting drugs like clonidine has been limited by its relatively poor patient tolerance and other side effects. This class of drugs acts by stimulating centrally located a_2 receptors mostly at a postsynaptic site. It results in vasodilatation but at the same time also produces some undesirable side effects like dry mouth, sedation, or depression, beside rebound hypertension on sudden with dra";'.l of the drug. Bousquet and colleagues in 1989 proposed a concept of "imidazoline receptors" located in the rostroventrolateral medulla, which on stimulation reduce the activity of the sympathetic nervous system[1,2,3]. Moxonidine (Cynt) is a second - generation drug in this series, which stimulates these n;ceptors. It is Sfiid to dissociates between aa 10% a_2-adrenoceptor - agonist action linked with side effects such as fatigue or dry mouth and a 90% specific antihypertensive action resulting from its selective agonist action at Ii - imidazoline receptors[4,5,6-;7,8]. This drug has been used in many clinical trials on long and shortterm basis and the results have been consistently positive. In a dose of 0.2-0.6 mg it produces a significant reduction in peripheral vascular resistance without the usual side effects in majority of cases observed with other centrally acting drugs. It reduces plasma nor epinephrine concentration as well as PRA. It has no effects on various metabolic parameters observed with some of the other antihypertensive drugs like the diuretics and BB[4,9,14]. It has also been shown to reduce the left ventricular mass[15]. In comparison with other well -

established antihypertensive drugs like BB, CCB and ACEI, it has come out as equally effective and adverse events profile always favoring moxonidine[4,9,14].

Most of the clinical data has been so far obtained on patients living in the Western Hemisphere. Thus a multi-center phase IV clinical trial was planned to see the effects of this drug in local population where racial, cultural and environmental factors are different than those observed in the west.

PATIENTS AND METHODS

Five centers from across Pakistan, two from Lahore and one each from Karachi, Islamabad and Peshawar participated in this open trial. Out patients with persistent mild to moderate diastolic blood pressure (DBP) i.e. >95 mmHg and < 115mmHg in sitting at third weekly visit after 4-weeks previous drugs wash out or an otherwise run-in period were included. All these patients had to sign an informed consent on visit 1. Following were excluded.

Pregnancy and or lactation.

Signs of malignant, progressive or serious hypertension.

C.VA./T.I.A. within the last 12 months. Peripheral vascular disease.

Epilepsy or depresison.

Heart failure, NYHA III-IV.

Bradycardia < 50/min, malignant cardiac arrhythmias, sick sinus, S.A, A.V block type n-III.

Unstable angina, myocardial infarction within three months, or acute myocarditis.

Adverse reaction with administration of a2-agonist drugs.

Renal insufficiency (bilirubin>2mg/dl, AST, ALT>X normal.

Significant hematological alteration. Chronic ethanol or drug abuse.

Terminal malignancy.

Post renal transplant, renal artery stenosis.

Hereditary angioneurotic edema. Medical consideration, which suggests a risk of changing the anti-hypertensive treatment.

Concurrent treatment with antihypertensive drugs like BB, CCB, ACEI and diuretics in patients with Ischemic heart disease.

Blood pressure of > 180/114 mmHg. Patients under 18 years of age.

There was a wash out or run in period of four weeks. During this their previous anti hypertensive treatment was tapered off and every patient was put on placebo. Subsequently the patients were started an initial dose of 0.2mg of Moxonidine. Blood pressure (BP) recordings in sitting position were made at every two weeks intervals following the standard recommendations. Dose of the drug was increased at an increment of 0.1 mg to maximum of 0.6 mg (0.3mg BD) where needed. Patients were followed for a period of 12 weeks. Following data was analyzed.

- Dose dependent changes in systolic blood pressure (SBP) and DBP.
- Dose dependent changes in heart rate.
- Dose dependent tolerance and side effects.

RESULTS

In all 113 patients were screened. Outs of these 97 were enrolled and 83 or 85.5% completed the protocol. There were 58 (51.33%) male and 55 (48.67%) FEMALES. Their age ranged from 24-73 years with a mean of 48.6 years. Among the males the age was 26-73 yr. (Mean=48.6) and for females 24-65 yr. (Mcan=48.9). History of previous treatment for hypertension was present in 72 patients where as 41 were newly diagnosed hypertensives. Among the enrolled group of 97, 62 had mild hypertension where as 35 had moderate hypertension. Among the completed group 18 (22%) remained on 0.2mg where as in 27 (33%), 20 (24%), 17 (21%) the dose was increased to 0.3, 0.4, 0.6mg respectively (Fig. I) There was an average drop of 14.8 mmHg in DBP (14%) and 18mmHg drop in SBP (11.2%). Maximum drop was observed with 0.2mg at visit 4 i.e. two weeks after the start of treatment (Fig. I). In 54 (65%) patients the BP changed from moderate to mild or mild to normal (single shift). Whereas in 15(18.1 %) BP changed from moderate to normal (double shift). In 14 (16.9%) patients there was no shft in their BP. Among the responders the initial response persisted through the end of the trial. This drop in BP observed during the course of the trial was statistically significant ($p<0.05$) and was not associated with any significant change in the heart rate (Table 3). There were eight patients with a DBP>1 I Oat visit 3. In all of these the DBP dropped to 95mmHg or below except one in whom it remained at I OOmmHg. Average DBP in this group at visit 3 was 113mmHg and it came down by an average of 19mmHg (17%) to 94mmHg (Fig. 2). Average drop in DBP and S.B.P. at 95% C.I. was 12.9 and 16.5 mmHg respectively (Table 2). In only three patients (3.09%) the drug has to be discontinued due to adverse side effects. Out of

these three patients first died of cerebrovascular accident (CVA), Second discontinued drug due to inadequate control of the pressure and third suffered unbearable tachycardia, palpitations and dryness of mouth. The most common side effects, in those who completed the protocol, were leg cramps 4.4% back pain 2.7%, body aches 1.8%, excessive wind and dyspepsia 1.8%, asthenia 3.5%, tremor 1.8% chest pain 1.8% and tachycardia 0.9%. The intensity of the symptoms was negligible to mild and patients continued the treatment without any hindrance in routine life. No abnormalities in different biochemical parameters were observed in any of the patients. maximum drop in blood pressure is centrally acting hypertensive agents like usually with in the first one to two weeks clonidine. It has no adverse effect on and persists at subsequent follow up to various biochemical pafameters seen one year or beyond. Since the drug seems with diuretics, ACEI and BB. to have a specific anti-hypertensive effect In a large scale trial published by Low by peripheral vasodilatation, thus the Kroger consisting of 9295 patients with maximum drop in BP is usually seen in primary hypertension were treated with only those higher ranges of BP. Thus it Moxonidine and followed up for 12 lowers the BP to a greater extent and at a weeks (18). There was mean decrease in lower dose in hypertensive patients than BP from 176/101 mm Hg at pre-teratment in normotensive patients (16). There is to 148/86 mmHg at week 12 of the no significant in the cardiac out put or treatment period. In our study consisting heart rate as observed with the other of 97 mild to moderate hypertensive.

DISCUSSION

Moxonidine is a recent addition to the antihypertensive armamentarium. On one hand it is a weak agonist at a_2-receptor site and simultaneously it is modulator of the recently discovered I1-imidazoline receptors, which reduce the BP by peripheral vasodilatation. It has been triec as an anti-hypertensive agent in many clinical trials [16, 17] Long and short term results are uniformly very Mxlrl Sys drug in a dose of 0.2 - Mxlrl Diastolic 0.6mg is very well tolerated. The patients, mean decrease in BP was from 155.5/103.5 mmHg at pre-treatment to 139/90.6 mmHg, a change that was statistically significant at $p<0.05$. In that Maxonidine daily, 24% 0.4 mg OD, of medicine 18.6% 0.2mg BID and 2.4% needed 0.6mg OD. In comparison, in our study.

Mean 8-week BP use after of 27% required 0.2mg OD, 30% required medicine 0.3mg OD, 23% needed 0.4mg OD and 20% had to take 0.3mg BID. In our study maximum drop of 18 mmHg was observe din those taking 0.2mg of the study drug. In both studies mean change in heart rate was 3 beats/min. In both these studies 0 20 40 60 80 100 120 140 160 180 there was no significant change in various Mean Change in B.P. after 8 weeks of treatment biochemical profiles and the electro-cardiogram remained essentially the same. They reported a 6.9% incidence of side effects compared to 2.3% in our group. In the final analysis the author of that study evaluated the efficacy of drug as "very good" in 48.7% "good" in 41.2%, "satisfactory" in 7 .3% and "unsatisfactory" in 2.8%. In our group 28.7% showed double shift response (BP changed from moderate to normal), 55.3% showed single shift response (moderate to mild or mild to normal) and 16% showed no response. The efficacy of t wo studies in thus identical since 89.9% of their showed "very good" to "good" response compared to 84% of our group in whom the BP changed by one or two shifts. A relatively higher no response of 16% seen in

Fig. 1: BP Vs Time (Moxonidine was started at V3)

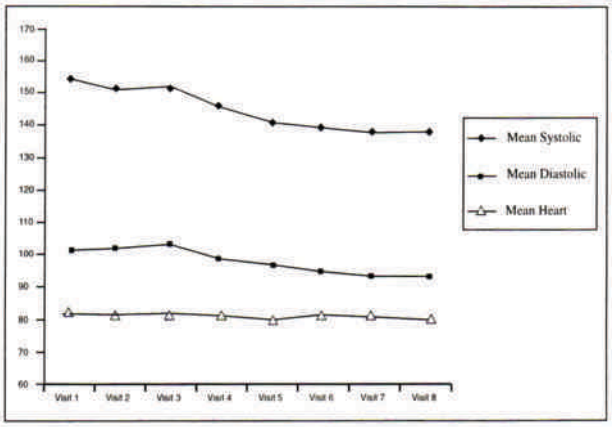

Fig. 2:

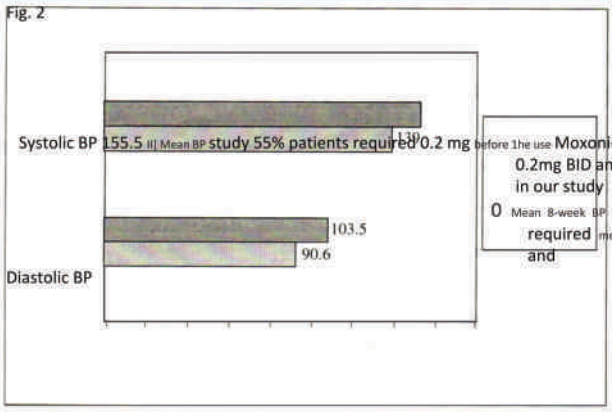

Table 1: Maintenance Dose Distribution

M:rintenance lbse	0.2 rrg	0.3 rrg	0.4 rrg	0.6 rrg	'1ttal
N.ner of p:i.tie:i.ts	24	26	20	17	ITT

Table 2: Average drop in IBP an dSBP with 95% Cl.

	Week 0	Week 12	Me:m drop Ojtto rre::lic:ine	95% ccnfid = :rJce	:irnnal	'KIIIE
Diastolic BP	103.5	90.6	12.9	10.25	15.47	<0.05
Systolic BP	155.5	139.0	16.5	12.71	20.31	<0.05

our group could possibly be due to relatively small number patients in our group.

CONCLUSION

We thus conclude that Moxinidine is an effective new centrally acting anti hypertensive drug, which can be used in the management of systemic hypertension. In the absence of any significant effect of this drug on various biochemical parameters it may have a special place among those hypertensive patients who suffer concurrently from metabolic disorders like diabetes, mellitus, hyperuricemia and chronic renal or hepatic insufficiency.

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MENTAL HEALTH LITERACY AND STIGMA AMONG CAREGIVERS OF PSYCHIATRIC PATIENTS VISITING JINNAH HOSPITAL LAHORE

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ABSTRACT

Objective: The objective is to examine the mental health literacy among caregivers of patients visiting Jinnah Hospital Lahore and the stigmatizing attitude that occurs as a result of these beliefs.

Material and Methods: A descriptive study was conducted by recording the responses of the caregivers about mental health literacy and stigma through a structured questionnaire. Non probability purposive sampling technique was applied for the collection of the data. The questionnaire was given to 100 caregivers of patients visiting outpatient and inpatient psychiatry departments of Jinnah Hospital Lahore from April to July 2016.

Results: Out of the 100 caregivers, 45 were previously unaware of the condition that their patients were diagnosed with. Twenty seven caregivers did not prefer to take their patients to their relatives place, 25 responded that they did not believe that their patients were capable of earning and 22 believed that they were incapable of leading healthy married lives.

Forty out of the 100 caregivers believed in supernatural beliefs such as evil spirits, sorcery and astrological influences as the cause of psychiatric illnesses. The majority of caregivers preferred non pharmacological therapy as it was seen that 73 respondents preferred help through psychologists whereas 12 preferred medicines and 10 preferred to go to peers and fakeers for therapy.

Conclusions: Results of the study showed that there is a lack of awareness and knowledge about mental illnesses seen in the general public. There appears to be widespread stigma regarding mental disorders which is reflected in the attitudes of the caregivers. Supernatural beliefs such as evil spirits, sorcery and astrological influences are common in caregivers of patients with psychiatric illnesses. Caregivers prefer non pharmacological therapy through the help of psychologists rather than medicines or peers and faqeers.

Key words: Mental health literacy, Stigma, Caregivers, Psychiatric patients.

The rate of increase of mental disorders is on the rise[1] and seeing this development, mental health is a priority in health policies in developed countries around the world. In contrast, developing countries do not place mental health as an important issue in their agenda[2]. As a result, it is seen that there is a general lack of awareness and knowledge about mental illnesses seen in the public. Most people are unaware of the signs and symptoms of these illnesses and are not sure about where they have to take their relatives when such an illness is encountered[3-5]. The general perception among people in developing countries is that these patients are emotionally and mentally weak individuals in the society[6,7]. In the subcontinent, this stigma is so severe that a person diagnosed with a mental illness is perceived as bringing shame to the family. People believe that patients with psychiatric illnesses are incapable of leading normal healthy lives and cannot progress in their careers or earn well. This usually affects their marriage potential as well as society starts to place a lack of trust towards these individuals[8,9].

The stigma and negative attitude associated with mental illnesses can add to the suffering and disability associated with mental disorders[10].

The view in developed countries is different from developing countries, where people are generally more supportive towards psychiatric patients,

which appears to be due to provision of better education facilities among the masses[11].

Regarding knowledge about mental illness, supernatural beliefs such as evil spirits, sorcery and astrological influences are common in patients with psychiatric illnesses. These beliefs are widely prevalent in the Indian subcontinent[12] where society is strongly tied with religious and cultural beliefs. However in China, people are starting to negate superstitious and supernatural beliefs such as witch crafts and curses. This is due to increased modern secular education and increase in secular humanistic values in the country[13].

The knowledge, attitudes and beliefs that caregivers have towards psychiatric illnesses determine the mode of treatment that the caregivers would choose for the patient[14]. In Pakistan, in the past it has been seen that caregivers have shown skepticism towards taking psychiatric medications and prefer either psychotherapy or traditional treatment methods for patients with psychiatric ilnesses. These include dam durood, quacks, taweez and homeopathic treatment[15].

OPERATIONAL DEFINITION:

Mental health literacy has been defined as knowledge and beliefs about mental disorders which aid their recognition, management or prevention. Mental health literacy includes the ability to recognize specific disorders; knowing how to seek mental health information; knowledge of risk factors and causes, of self-treatments, and of professional help available; and attitudes that promote recognition and appropriate help-seeking.

Stigma is defined as a sign of disgrace or discredit, which sets a person apart from others. The stigma of mental illness, although more often related to context than to a person's appearance, remains a powerful negative attribute in all social relations.

OBJECTIVES:

The objective is to examine the mental health literacy among caregivers of patients visiting Jinnah Hospital Lahore and the stigmatizing attitude that occurs as a result of these beliefs.

MATERIAL AND METHODS:

STUDY DESIGN:

- Descriptive study

STUDY SETTING:

- The study was conducted at Jinnah Hospital, Lahore affiliated with Allama Iqbal Medical College, Lahore.

DURATION OF STUDY:

- 4 months (April-July 2016)

SAMPLE SIZE:

- 100 caregivers of psychiatric patients coming to psychiatry ward and OPD Jinnah Hospital, Lahore

SAMPLING TECHNIQUE:

- Non probability - purposive sampling

SAMPLE SELECTION:

The study was carried out on one adult family member accompanying the patient.

Inclusion criteria:

- Age above 18 years
- Relatives having a relationship of parent/ sibling/ spouse/child with the patient.

Exclusion criteria:

- Relatives having psychiatric disorders
- Caregivers who are in the medical profession i.e. doctors, nurses and medical students
- Relatives who refused to participate

DATA COLLECTION PROCEDURE:

All male and female caregivers of psychiatric patients who met the inclusion criteria were included in the study. Informed consent was taken and assurance was given of confidentiality. They were told to fill a structured questionnaire which was prepared in Urdu and included the following questions: personal and social demographic data (age, gender, education and occupation), knowledge about disease and treatment options and the attitude of caregivers towards their patients.

DATA ANALYSIS PROCEDURE:

The data was entered and analyzed by computer software SPSS version 16. The frequencies of

responses to the questions was recorded and tabulated. Chi-squared values were calculated when the attitudes and beliefs were compared with educational status. The level of significance was taken to be <0.05.

The variables in the data were age, gender, education and occupation.

RESULTS AND MAIN FINDINGS:

Table 1: *Caregiver's perception about the future prospects of the patients classified according to educational status*

	Education		Total
	up to Matric	Matric and above	
Do you think your patient can live a happy married life?	12	10	22
	20.0%	26.3%	
Do you take them to your relatives place?	12	15	27
	19.7%	38.5%	
Do you think your patient capable of earning?	14	11	25
	23.3%	28.9%	

Table 2: *Caregiver's belief in supernatural phenomena as a cause of the illness classified according to educational status*

	What is your education?		Total
	up to Matric	Matric and above	
Do you think this problem is influenced by witchcrafts or any supernatural phenomenon	30	10	40
	49.2%	25.6%	

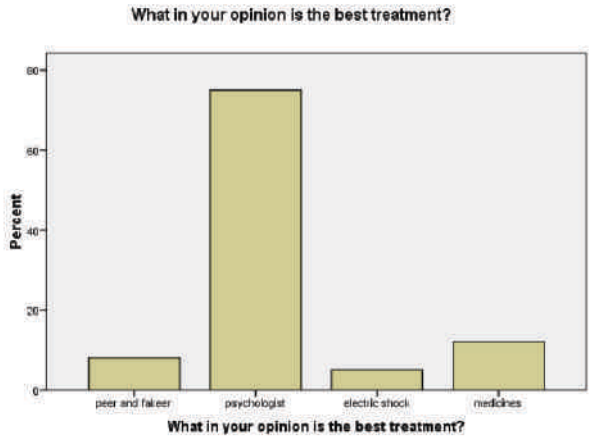

Fig. 1: *Caregiver's opinion about the best mode of treatment*

RESULTS:

A total of 100 primary caregivers were selected to fill out the questionnaire. Sixty were males and 40 were females. Sixty six respondents were between the ages of 20 – 40 years while 34 were above 40. Sixty one caregivers had studied up till matriculation while 39 had continued their studies after matriculation.

Out of the 100 caregivers, 45 were previously unaware of the condition that their patients were diagnosed with. Fifty five of them had previously heard of the condition that their patient had.

The social pressure was such that only 27 out of the 100 caregivers preferred to take their patients to their relatives' place while the rest opted to leave them in their homes. This attitude was compared according to the educational status of the relatives. Out of the 39 caregivers who were educated above matric, 15 preferred to take their patients to their relatives place. On the other hand, out of the 61 who were educated below matric only 12 preferred to do the same. Statistically the relationship was found to be significant. ($X2=4.26$, $df=1$, $p<0.05$).

Eighty six respondents did not believe that their patients were a burden on their lives while 14 answered otherwise which shows that families are generally supportive towards their patients.

Out of the 100 respondents, 22 believed that their patients were capable of living happy married lives. 10 respondents out of the 39 who had studied above matric adhered to this view while 12 out of the 61 who were educated below matric responded positively to this question. However, the relationship was found to be non-significant ($X2=0.49$, $df=1$, $p>0.05$).

Twenty five caregivers believed that their patients were capable of earning. This question also got a varied response from the respondents as people with education above matric who agreed with this statement were 11 while patients with education below matric came out to be 14. This relationship

was also found to be insignificant (X2=0.35, df=1, p>0.05)

Forty out of the 100 caregivers believed in supernatural beliefs such as evil spirits, sorcery and astrological influences as the cause of psychiatric illnesses. This view was largely present in caregivers who were educated below matric as 30 out of the 61 who were educated below matric adhered to this view. (X2=5.49, df=1, p<0.05)

Caregivers were inquired about their preferred mode of treatment. Seventy three caregivers preferred non pharmacological therapy through the help of psychologists, 12 chose medicines as the best option and 10 respondents preferred the methods employed by peers and fakeers.

Ninety three respondents were of the opinion that the condition that their patient was suffering from was treatable.

DISCUSSION:

This study aimed at assessing the mental health literacy and stigma in caregivers of psychiatric patients visiting Jinnah Hospital Lahore.

Results of the study confirm that there is low level of mental health literacy among the general public. There is a lack of awareness and knowledge about mental illnesses. According to the study, a significant percentage of caregivers (45%) were previously unaware of the condition that their patients were diagnosed with. This is in contrast to developed countries such as Italy[11] where a study showed that 98% of the participants were aware of psychiatric illnesses such as depression.

The effects of social stigma attached with mental illness can be appreciated in this study. Results showed the majority of caregivers believed that their patients were incapable of leading normal, healthy lives or were able to improve their quality of life and few took their patients to their relatives' place. This stigmatizing attitude of caregivers has been previously documented in studies conducted in India[9] and Pakistan[4]. This was seen to be more prevalent among people who had only studied uptil matric showing that respondents with higher education dealt with their patient's illness in a more responsible way.

Supernatural beliefs such as evil spirits, sorcery and astrological influences are common in caregivers of patients with psychiatric illnesses. The results of the study showed that a large percentage (40%) of the caregivers believed in these phenomena as a cause of the disease. The results were similar to a research conducted in India where 58% of the participants believed in magico-religious beliefs as a cause of the illness[12]. A similar study conducted in Lahore, Pakistan confirmed the same results[15]. However in China, a study showed that people are starting to negate superstitious and supernatural beliefs such as witchcrafts and curses. This is due to increased modern secular education and increase in secular humanistic values throughout the world particularly in developed countries[13].

It has been seen and documented in the past that there is a large proportion of people in Pakistan who believe that the treatment for these conditions is by taking the patient to peers and fakeers. Therapeutic treatment has been seen with skepticism in the past. However, this study pointed otherwise. The number of caregivers preferring the methods employed by peers and fakeers was seen to be significantly low. Instead, 73% of the caregivers preferred non pharmacological therapy through the help of psychologists. People did not place a lot of confidence over the use of pharmacological intervention for therapy as only 12% chose medicines as the best option. A similar study conducted in Lahore showed similar results indicating that a greater proportion of patients preferred medical therapy rather than treatment through traditional means.[15]

A positive thing seen was that caregivers were optimistic about the health of their patients and the majority of them (93%) were of the opinion that the condition that their patient was suffering from was treatable. It is imperative to note here that the study was held in a hospital atmosphere and the respondents consisted of caregivers who had been bringing

their patients to the hospital and consented for the study. Thus, this included a motivated group.

RECOMMENDATIONS:

These statistics could be used to raise awareness among the masses and tackle the stigma that exists widely. Caregivers can be educated on how to manage psychiatric patients and how to react responsibly when a family member is diagnosed with a mental illness. Group psychoeducational programmes catering for caregivers have shown promise in Iran[16] and can be conducted in Pakistan as well.

CONCLUSION:

Results of the study show that there is a lack of awareness and knowledge about mental illnesses seen in the general public. The effects of social stigma attached with mental illnesses can also be appreciated through the results. Supernatural beliefs such as evil spirits, sorcery and astrological influences are common in caregivers of patients with psychiatric illnesses.

Regarding the choice of therapy, caregivers prefer non pharmacological methods through the help of psychologists. Caregivers do not place a lot of confidence over the use of pharmacological intervention for therapy or in peers and faqeers.

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FREQUENCY AND ANTIBIOTIC SUSCEPTIBILITY OF BACTERIAL PATHOGENS RESPONSIBLE FOR NEONATAL SEPSIS A TERTIARY CARE EXPERIENCE

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ABSTRACT

Background: Neonatal sepsis is a life threatening problem in neonates which is one of the major contributors of neonatal mortality especially in developing countries. The aim of our study is to enlist the organisms predominantly responsible for neonatal sepsis in our hospital and to determine their antimicrobial spectrum of sensitivity. Surveillance should be conducted shortly apart (every 3-6 months) to update the causative organisms and their sensitivity spectrum in particular localities. The administration of organism specific antibiotics will be helpful in decreasing the number of multidrug resistant strains which are spreading due to the administration of broad spectrum antibiotics, being given to patients on empirical grounds.

Subjects and Methods: Study was conducted on 200 blood culture samples. These samples were cultured and after confirming the offending agent its antimicrobial susceptibility pattern was also determined.

Results: Out of 200blood culture samples received, 83were positive for growth. Of 83 positive cultures, 38 samples (46%) showed growth of Acinetobacterspecies, 32 (38%) of Staphylococcus species and 13 Candida Species (16%)

Conclusion: The commonest organism responsible for sepsis in neonates in our setup is Acinetobacter-species, second being Staphylococcus Spp and third one is candida spp.

Study Design: Cross-sectional observational study.

Setting: Microbiology Laboratory of Allama Iqbal Medical College, Lahore

Duration of Study: January 2017 to March 2017.(3 month).

Key words: Neonatal Sepsis, Blood culture, Acinobacter species, Staphylococcus Spp, CandidaSpp, Multi-drug resistance.

Sepsis neonatrum previously known as neonatal sepsis is defined as "Neonatal infection occurring in the first 28 days of life".(1) It is considered one of the major causes of mortality among neonates throughout the world, especially in developing countries.[1]

Neonatal sepsis contributes to approximately 30-50% of neonatal deaths each year.[2] It has been estimated that up to 20% of neonates develop sepsis and approximately 1% of them die because of it and associated complications.[2]

Neonatal sepsis refers to the presence of systemic infection in neonates including septicemia, pneumonia, meningitis, arthritis, osteomyelitis, and urinary tract infection.[2]

Neonatal sepsis is categorized according to the postnatal age of the infant at the onset of the disease. Early onset sepsis i.e. less than 72 hours and late onset sepsis i.e. greater than 72 hours.[3]

The signs and symptoms of newborns presenting with neonatal septicemia are nonspecific. These patients can present with hyperthermia or hypothermia, respiratory distress either cyanosis or apnea, difficulties in feeding, hypotonia or lethargy, irritability or seizures, there may be increased intracranial pressure manifested as bulging fontanelle, cold extremities due to poor perfusion, bleeding problems, distended abdomen, hepatomegaly,

unexplained jaundice or any other nonspecific symptom.[4]

The highest rate of neonatal sepsis has been observed in low birth weight newborns especially in those having severe birth asphyxia and maternal complications like toxemia of pregnancy, precipitous delivery, maternal Infections and intra partum hemorrhage.[4]

As in the past, neonatal sepsis is still a leading cause of neonatal hospital admissions, ailments and deaths in developing countries.[5] The reasons for such a persistence in the incidence of neonatal sepsis is home deliveries conducted in septic conditions, lack of breast feeding, nosocomial resistant infections, multidrug resistant bacterial pathogens and lack of proper treatment strategies regarding general as well as specific empirical treatment approaches to that particular enviroNment based on continuous surveillance.[5]

Developing countries contributes to 99% of 4 million neonatal deaths worldwide each year.[6] Infections such as sepsis, pneumonia, diarrhea and tetanus are the major ailments which are responsible for approximately 34 neonatal deaths per 1000 live births in contrast to the proportion in developed countries where neonatal mortality caused by sepsis is around 5/1,000 live births.[7,8]

For the diagnosis and treatment of neonatal sepsis blood culture is considered a gold standard.[9] Currently, the greatest challenge being faced in the treatment of neonatal septicemia is multidrug resistance among the causative organisms which is adding up to the difficulty in controlling the morbidity and mortality rates attributed to neonatal septicemia.[10] The disproportionate pace of the development of multidrug resistance and the development of new antibiotic drugs are major points to ponder.[10] It is the need of the era to use antibiotics wisely and to limit the administration of broad spectrum empirical antibiotics, otherwise, after a short time span there will be no drugs available for the treatment of Neonatal sepsis.[10]

Apart from focusing on the treatment strategies, preventive measures should be considered especially to recognize infants who are at a greater risk, consideration of proper aseptic measures during labor and increasing community awareness regarding exclusive and early Breast feeding.[11] Indeed, new strategies need to be developed which can be helpful in early diagnosis and prompt treatment of neonates.[12]

Most of the blood cultures show growth confirming sepsis usually in 24-72 hours. Day by Day the rate of Neonatal sepsis is increasing alarmingly, adding up to the burden on health care services owing to lack of proper antenatal care and follow-up. Lack of aseptic delivery practices especially those conducted at home by untrained birth attendants without following precautions and protocols such as cutting and ligation of umbilical cord under septic conditions are resulting in rapid increase in the number of cases of neonatal septicemia being admitted in hospitals.[13]

The purpose of our study is to identify pathogenic bacteria responsible for neonatal septicemia in our setup and to determine their antimicrobial susceptibility spectrum for lining up the treatment strategies for specific prevalent organisms.

The bacterial pathogens responsible for causing sepsis in neonates are acquired intrapartum either directly from mother's blood, skin, birth canal or from the surroundings in which delivery is being conducted.[13] Many researches have been conducted to determine the pattern and frequency of hospital acquired infections in tertiary care settings, but a limited workup has been done to find out the organisms being responsible for causing septicemia in Pakistan during the last decade.[14]

Furthermore, broad spectrum antibiotics administrated to overcome this life threatening condition is resulting in rapid emergence of multidrug resistance among the causative agents adding up to the difficulty in patient management. Unfortunately, Pakistan is ranked eighth most common country having greatest number of newborn deaths each year of which neonatal sepsis is a major contributor.[15] An

important factor responsible for this is lack of availability of microbiological diagnostic facilities. This is why most of the pediatricians and physicians have to prescribe broad spectrum antibiotics to save life of the new born by treating them on empirical grounds.[15]

Many studies have been published about an increase in antimicrobial resistance among bacterial pathogens responsible for blood stream infection as its incidence is increasing day by day. This is because of the wide spread use of antibiotics empirically.[16] It has resulted in decreased therapeutic options available for the health team to overcome this disease.[9] An observational study conducted in Israel highlighted the fact that among the patients of neonatal sepsis, death rate was particularly higher for those who received inappropriate empirical treatment.[17]

Hence concluded that detection of pathogens responsible for blood stream infections should be considered a priority in our clinical settings. For this purpose blood culture is considered a gold standard.[12]

More than 4 million neonatal deaths have been reported each year by World Health Organization (WHO), out of which about 3 million were those of neonates.[15] Neonatal deaths caused by sepsis have been more common in developing countries like Pakistan.[12,13] Approximately 500 neonatal deaths have been reported in Pakistan every day, the neonatal mortality rate being 54/1000 live births; as described by UNICEF (2009).[15]

OBJECTIVE

The aim of our study was to list the organisms predominantly responsible for neonatal sepsis in our hospital.

MATERIALS AND METHOD

Our study was a cross-sectional observational study, carried out on 200 blood samples received with the clinical diagnosis of Neonatal sepsis from JINNAH Hospital from January 2017 to March 2017 at the Department of Microbiology, Allama Iqbal Medical College, Lahore.

A blood sample of 2ml/kg body weight was taken in Pediatric culture bottles through venipuncture under aseptic measures by swabbing and drying the patient's skin. The sample was then added to a pre-prepared (filled with 20 ml of the medium i.e. 10 times that of the sample) and sterilized blood-culture bottles. These bottles were incubated at 35-36 C0 Positive blood samples were than cultured on appropriate sterile agar plates. The culture media used were blood agar, chocolate agar and MacConkey's agar.

The bacteria isolated were further identified biochemically using biochemical tests. Antimicrobial sensitivity testing was done for bacterial isolates using Ceftriaoxone, Augmentin , Gentacin, Imepenim and Ciprofloxacin by culturing the organism on Muller Hinton agar and using the fore mentioned antibiotic discs. After 24 hours of incubation biochemical test results were interpreted and microorganisms were identified as well as the antibiogram was reported by analyzing the sensitivity spectrum for the applied antibiotics according to CLSI 2016 guidelines..

Antibiotic susceptibity of the isolates was then assessed and reported to guide the clinician regarding the choice of antibiotics for a particular case.

RESULTS

A total of 200 samples with the clinical suspicion of neonatal sepsis were submitted to Microbiology Department. Out of 200 samples 83(42%) were positive for growth whereas 117 (58%) samples did not show any growth.

Out of 83 culture positive isolates, 38 samples (46%) showed growth of Acinetobacterspecies, 32 Sample (38%) of Staphylococcusspp and 13 (16%) of Klebsiella species. Hence in our study the most common bacterial pathogen being responsible for neonatal sepsis was Acinatobacter species, second most common being Staphylococcusspp and third one candida species.

In this study Acinatoobacter species show maximum resitance against Ciprofloxacin, Gentacin and Ceftriaxon. Staphlococcus species show maxi-

mum resistance against Gentamycin , Imipenem and Doxycyclin.

Fig. 1: *Proportion of blood cultres positive for bacterial growth*

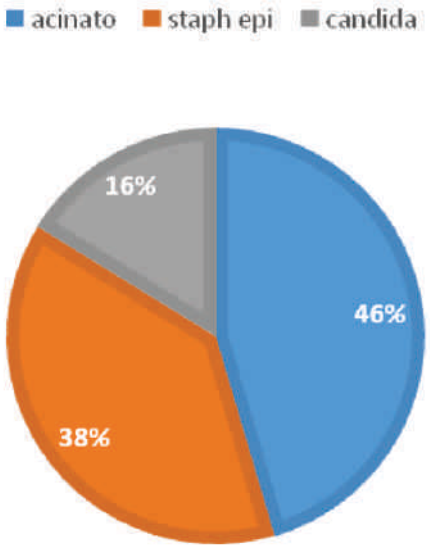

Table 1: *ACINATOBACTER Spp SUSCEPTIBILITY PROFILE*

Antibiotics	Frequency	Percentage
CTR	28	73%
AMC	28	73%
DOX	21	55%
CIP	33	86%
GEN	29	76%
IMI	22	57%
AMK	26	68%

Table 2: *STAPHLOCOCCUSSpp SUSCEPITIBLITY PROFILE*

Antibiotics	Frequency	Percentage
CTR	18	56
AMC	21	65
DOX	25	78
CIP	22	68
GEN	26	81
IMI	26	81
AMK	22	68

DISCUSSION

Neonatal Sepsis is a life threatening disease of neonates all over the world.18It is one of the medical emergencies which if not treated properly on time can have serious consequences.[19] Thus its empirical treatment must comprise of a combination of drugs which can cover the bacterial pathogens most commonly responsible for neonatal sepsis in a particular location.[19] Time to time surveillance is required to identify the common pathogens being responsible for it as well as their antimicrobial sensitivity spectrum to overcome this problem.

Neonatal Septicemia is a clinical ailment which is characterized by signs of circulatory compromise such as poor peripheral perfusion usually characterized by pale or cyanosed skin, hypotonic and poorly responsive lethargic baby.[18] Before the development and establishment of antibiotics administration protocols, neonatal sepsis was life threatening. Even now mortality rates among infants who are treated with antibiotics are 5% to 60%, having disproportionate distribution worldwide being the highest in developing countries.[18]

According to a statistical data provided by World Health Organization (WHO) about 1 million neonates die each year because of neonatal sepsis, of which 42% die in their first week of life.[5] A major factor responsible for a marked difference between the rates of neonatal sepsis in developing and developed countries is disparities in neonatal care, health facility infections and home conducted deliveries in septic environment.[20] Premature infants are at greater risk. One of the main reason being reported especially indeveloped countries is increased admissions of premature babies who are at a greater risk of acquiring hospital infections most of which being caused by multidrug resistant bacterial pathogens.[20]

In Jinnah Hospital setup Acinateobacterspecies is most prevalent organism responsible for neonatal sepsis while among Gram positive rods Staphlyococcussppis most common. Candidasppis next common isolates.

Our study results are somewhat similar (regarding first and third most prevalent organism) to a study conducted in a private hospital in Festac town, Nigeria, which showed that Klebsiell a species

(34.3%) is the most common Gram-negative bacteria while Staphylococcus Spp(28.1%) is the commonest Gram-positive bacteria associated with neonatal septicaemia. But it differs regarding the most common organism which in our study is Acnatobacter Species.

A studied conducted in Rawalpindi showed that the most common Gram positive pathogen responsible for sepsis in neonates is Staphylococcus Spp (47.7%) which is similar to our results, while AcinetobacterSpp, Pseudomonas Spp,E. coli and Salmonella Sppwere the most common Gram negative isolates, which is also similar with our results.[11,23,30]

A research conducted in Peshawar showed that Escherichia coli was the most common organism (36.6%), Staphylococcus aureus (29.5%) being the second most common followed by Pseudomonas species (22.4%), Klebsiella species (7.6%), and Proteus (3.8%). The results differs from ours regarding the prevalence of E.coli but show similarity regarding the prevalence of Staphylococcus aureus. In their study Pseudomonas and E.coli showed a great degree of resistance to commonly used antibiotics (Augmentin, Gentamicin and Ampicillin) . In their study Staphylococcus aureus showed a low resistance to all of the three antibiotic groups which is in contrast to our results in which Staphylococcus showed high resistance to Cephalosporins and sensitivity to Chloramphenicol and Vancomycin.[18]

A study carried out at a Tertiary care Hospital of Nepal showed that neonatal sepsis was 20.3% prevalent in their hospital.[21] The predominant isolates in their study were Gram positive cocci (88.40%) which is in contrast to our study. In their study the most common gram positive organism isolated was Staphylococcus epidermidis (72.46%) the second one being Staphylococcus aureus (7.24%), third one Staphylococcus saprophyticus (4.34%) and Enterococcus fecalis as the fourth most common isolate (4.34%). [(21)] This is also in contrast to our study in which the most predominant gram positive species was Staphlococcusaureus. Approximately 11.60% positive culture samples showed growth of Gram negative bacilli especially E.coli 10.14% and Klebsiella species 1.44%.[21] It also differs from our study. Sensitivity of their isolates was highest for Amikacin. In their study Vancomycin was the drug to which most of the gram positive pathogens were sensitive which resemble our results for positive isolates.

Regarding protection against this deadly disease early breast feeding is of prime importance. The initiation of breast feeding within first twenty four hours of birth is known as early breast feeding. Its benefits have been known for years which are now confirmed.[22]

Today a major concern in treating neonatal sepsis is an increased incidence of antibiotic resistance among bacterial pathogens which is mainly effecting the treatment of ill neonates empirically. It highlights the need for continuous microbiological surveillance in all clinical and hospital setups.[11]

CONCLUSIONS & RECOMMENDATIONS

It is recommended that surveillance should be conducted shortly apart (every 3-6 months) to update the causative organisms and their sensitivity spectrum in particular localities. Each hospital must maintain its own specific antibiogram considering all the possible empirical treatment options. Efforts must be directed to keep this life threatening disease under control by administration of an effective empirical treatment to the baby keeping in mind the prevalent organisms to save the life of the patient, when the blood culture and sensitivity report is awaited.

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TOXIC EFFECTS OF EDIBLE OIL DERIVED FROM GENETICALLY MODIFIED AND INSECTICIDE TREATED COTTON (GOSSYPIUMHIRSUTUM L.) ON THE ESTROUS CYCLES OF FEMALE RATS

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ABSTRACT

Human fertility rate is declining not only in Western countries but also in developing countries. The public and scientific concern over the possibility that fertility may be at risk from exposure to environmental contaminants is increasing. Pesticides and other environmental agents can interfere with female reproductive function by multiple mechanisms. In the present study, twenty four adult female albino rats, were divided into four groups. The rats in groups 2, 3 and 4 were given cottonseed oil obtained from insecticide free non-Genetically Modified (non-GM) crop, cottonseed oil obtained from insecticide sprayed non-GM crop and cottonseed oil obtained from insecticide free GM (carrying insect resistant Bt gene) crop @ 400mg/kg body weight per day, respectively, for a period of 30 days while Group-1 was kept as Control fed with distilled water @ 400mg/kg body weight per day, in addition to ad libitum access to food & water. At the end of one month, the number of estrous cycles and number of days of each phase of estrous cycle in each rat was compared to assess changes. The results indicated that the cottonseed oil, irrespective of the source, have significantly reduced the number of estrous cycles in the treated groups as compared to control. Number of days in Proestrous, estrous and metestrousphases showed insignificant differences among all groups. However, the number of days in diestrous phase significantly increased ingroup-2 as compared with control group.

Fertility problems affect one in seven couples in the UK[1]. It has been shown that fertility rates in human are declining both in Western countries and developing countries. The ovulation problem in females causes nearly one fourth of infertility. This problem may be due to hormonal imbalance. Changes in lifestyles (for instance, smoking),late maternal age, occupational factors (heavy physical work, use of anaesthetic, anti-neoplastic drugs, solvents and heavy metals) and chemicals present in diet and environment may also affect the ability of a woman to get pregnant[2]. The concern among public and scientific community is increasing over the possibility that due to exposure to environmental contaminants, fertility may be at risk[3]. In several anthropogenic processes, thousands of chemicals are used, to which humans are exposed. The solvents of organic and chemical nature, heavy metals, pesticides, polychlorinated biphenyls and rest of the persistent organic pollutants are environmental factors under focus of the scientific community. In our environment, pesticides are omnipresent contaminants[4]. Female reproductive function may be interfered by pesticides etc. through various mechanisms including direct damage of the gamete, distorted hormonal balance, unusual reproductive tract development or hindrance to fertilization and implantation[5].

Another area of concern is the use of recombinant DNA technology to transfer distantly related genetic traits in plants that includes resistance against insects, herbicides, viruses and diseases besides male sterility traits and quality improvements. During gene transfer, genes from different organisms are isolated and transferred in combination of marker, promoter and terminator genes / sequences and made to express into hosts to enhance productivity. It is apprehended that some transgenics may harm useful plants, animals and humans; and that managed genes and their products, may pose numerous potential hazards if allowed to move freely in nature.[6] The advanced biotechnological techniques have made it possible to evolve insect resistant crops, such as cotton, by introducing genes from Bacillus thuringiensis that encode insecticidal proteins[7]. Although U.S. Environment Protection Agency has determined that Btproducts showed no undesirable effects and concluded Bt products to be non-toxic to humans[8], there are certain reports that show potential undesirable effects of Bt products in humans[9,10]. The shorter duration of estrous cycle in rats makes them perfect for investigations during the reproductive cycle[11]. After oral administration of Monocrotophosto normal virgin Swiss albino mice at doses of 1.6, 3.3, 6.6, 10 and 13 mg/kg body weight/day for 30 days, estrous cycle was affected by a significant decrease in number of estrous cycles and duration of proestrous, estrous and metestrous with simultaneous significant increase in duration of diestrous in all treated groups except that of 1.6 mg/kg body weight/day monocrotophos treated group. The changes may be due to hormonal imbalance or toxic effects of monocrotophos which has analgesic and sedative action and adversely effects reproductive function[12].

GM feed have been used to raise farm animals for many years. In fact, adverse effects may not be evident at once. However, studies designed to assess health effects of genetically modified feed on animals show injurious effects on animal health. Rats developed ulcerations in stomach when they were given GM tomatoes[13]. Rats which were fed with GM soya had offsprings having four times more deaths than control rats[14]. Functions of liver, testes and pancreas were disturbed in mice fed with GM soya[15,16,17]. Allergic reactions were developed in mice by GM peas[18]. The toxicity in the form of enlarged livers was observed in rats when given GM oilseed rape[19]. A slowed down rat growth, disturbed kidney and liver function and increased fats levels in the blood were observed when given GM maize[20]. Rats depicted damage to kidneys, liver and changes in biochemistry of blood upon feeding with GM insecticide-producing maize for three generations[21]. The effects of various forms of cottonseed oil (whole Cottonseed, "Refined" industrially extracted Cottonseed oil and "Crude" locally extracted Cottonseed oil) were determined on the estrous cycle, ovulation and histoarchitecture of reproductive organs of female rats. Varying degrees of variation from the expected 2:1:1 ratio of number of diestrous: proestrous: estrous days were noticed. The variation was greatest in group B animals which were treated with finely ground whole cottonseed powder. Ovulation was completely blocked in animals treated with locally extracted "crude" cottonseed oil (Group C)22. By giving different dosages of triptolide (TR), ovarian follicular apoptosis and developmental effects were seen. In high dose group ($p < 0.01$) average estrous cycle was significantly longer as compared to placebo and low dose group. No significant change in number of primordial and antral follicles among 3 groups was observed but secondary follicles were significantly more in low and high dose groups than control group. At the stage of secondary follicles elevated proportion of apoptotic follicles were found in both high and low dose groups. TR presented dose-dependent estrous cycle inhibition and apoptosis induction in secondary follicles which was triptolide dose dependent might account for female gonad depression activities[23].While studyinghealth effects of parental dietary exposure to GM rice TT51 on the male reproductive system of offsprings of rats, no

significant differences were observed in body weight by food, organ/body weights, serum hormones, testis function enzyme ACP, SDH and LDH activities, sperm parameters, testicular histopathological changes, and relative mRNA expression levels of GnRH-R, LH-R, FSH-R, and AR along the HPT axis(Wang et al., 2016)[24].

Cottonseed, sunflower, canola, rapeseed and mustard are major oilseed crops grown in Pakistan. Cotton crop is primarily grown for lint, however it contributes more than 75 percent in local edible oil production (Economic Survey of Pakistan, 2016-17)[25]. Since the cottonseed oil is being obtained from both conventional and biotech cottonseeds, it is imperative that comparative toxic effects of edible cottonseed oil derived from insecticide free genetically modified (GM) crop, insecticide free non-GM crop and insecticide sprayed non-GM crop on the fertility may be studied.

MATERIALS AND METHODS

Twenty four adult female albino rats (12 weeks of age) were obtained from Animal House, Postgraduate Medical Institute, Lahore and kept for two weeks in the experimental research laboratory of University of Health Sciences, Lahore for acclimatization prior to start of the experiment. The animals were kept at 22±2°C at a humidity level of 55±10% with a 12:12h light–dark cycle and allowed free access to food and water inside standard metallic cages. The rats used in this study were maintained and treated in accordance with the guidelines established by the Ethical and Practical Principles of the Use of Laboratory Animals (Andersen et al., 2004)[26] and the experimental protocol approved by the Ethical Committee of University of Health Sciences, Lahore. The rats were marked at back with a unique number with an atoxiccoloured solution. Rat Body Weight was used to calculate exact dose of each animal. Animals were randomly divided into four groups, each comprising of sixrats. Group-1 (Control) rats were given orally distilled water@ 400mg (equivalent to400µl)/kg body weight per day. Group-2, Group-3 & Group-4rats were given cottonseed oil obtained from insecticide free non-GM crop, cottonseed oil obtained from insecticide sprayed non-GM crop, cottonseed oil obtained from insecticide free GM (Bt) crop@ 400mg (equivalent to 432µl)/kg body weight per day, respectively, for a period of 30 days. The doses were split into two equal halves to be administered in mornings and evenings.

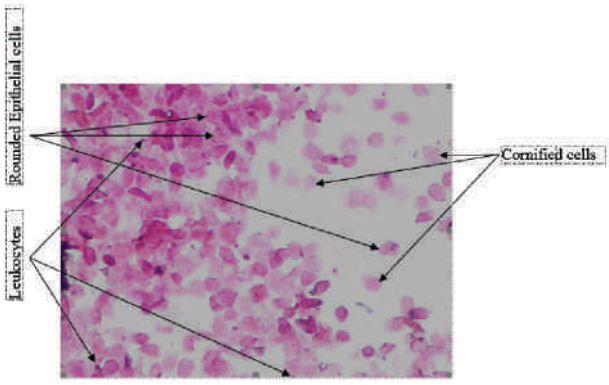
Determination of Estrous Cycles

The estrous cycle lasts for four days and is characterized as: proestrous, estrous, metestrous and diestrous, which may be determined according to the cell types observed in the vaginal smear (Marcondeset al.2002)[11]. During one month, every morning between 8:00 a.m. to 9:00 a.m. animal cages were carried to the experimental room. Each rat was held at the back of the neck region to keep it in a stable position for collection of vaginal secretion. The head was gently squeezed and fixed with the help of the thumb and the index finger. With the second hand the tail of the rat was pushed aside so that the investigator could insert the tip of the pipette into the vagina. Vaginal secretion was collected with a 100µl micropipette filled with 10µl of normal saline (NaCl 0.9%) by inserting the tip into the rat vagina, but not deeply, at an angle of 45º. Normal saline was injected intravaginally and after 2-3 seconds, vaginal fluid was drawn. Vaginal fluid was placed on glass slides. A different glass slide was used for each animal daily. One drop of vaginal fluid was collected with a clean tip from each rat. The material was smeared on the slide, fixed with 90% ethanol, stained with Haematoxylin and Eosin solutions and observed under a light microscope, with 10x and 40x objective lenses. Three types of cells could be recognized: round and nucleated ones as epithelial cells; irregular ones without nucleus as the cornified cells; and the little round ones as the leukocytes. The proportion among them was used for the determination of the estrous cycle phases as described by Marcondeset al., 200211 (Figures-1, 2, 3, 4 & 5).The data were subjected to One Way Analysis of Variance

as given by Steel & Torrie, 198027.The post hoc Tukey's Multiple Comparison test was applied where means differed significantly.

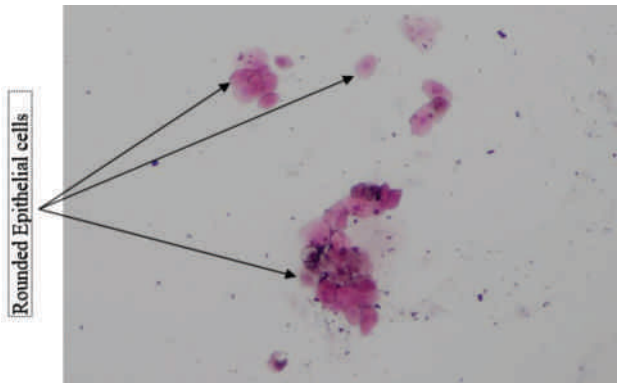
Fig. 1: *Determination of Estrous Cycle Phases*

Vaginal fluid was collected from each rat,



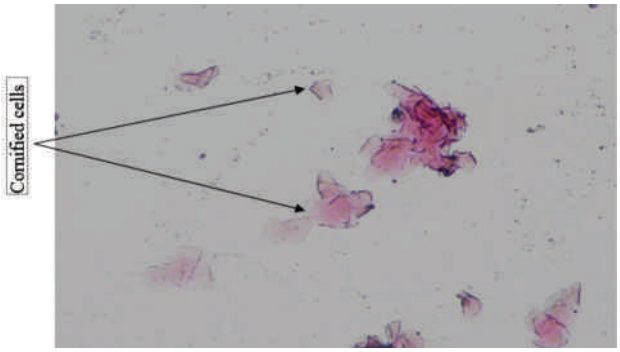
smeared on the slide, stained with Haematoxylin and Eosin solutions and observed under a light microscope with 10x and 40x objective lenses.

Figure-2: *Proestrous Phase*



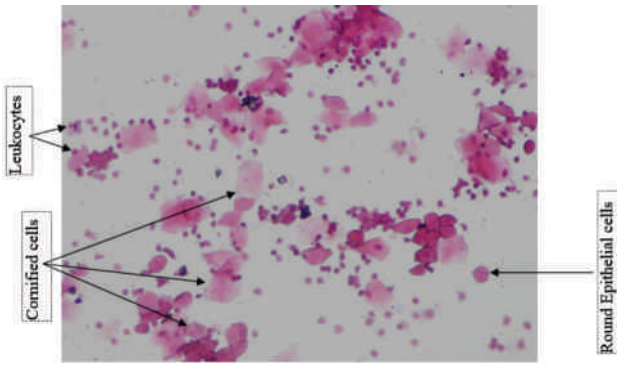
The Proestrous phase was identified by the presence of rounded epithelial cells, mostly nucleated and proportionately more in number than the other two types of cells.

Figure 3: *Estrous Phase*



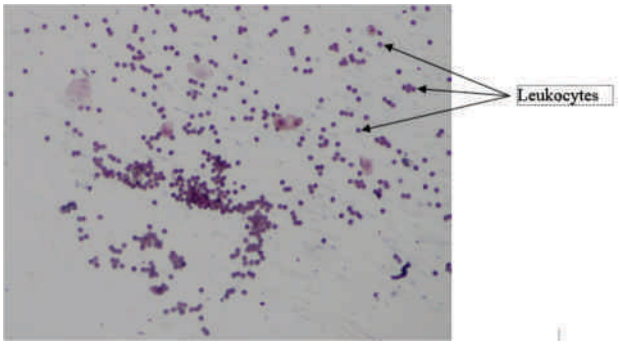
The Estrous phase was identified by the presence of proportionately more number of cornified cells i.e. large angular, irregular shaped and mostly enucleated cells.

Figure-4: *Metestrous Phase*



The Metestrous phase was identified by the presence of all the three types of cells i.e. cornified, epithelial and leukocytes in equal proportion.

Figure-5: *Diestrous Phase*



The Diestrous phase was identified by the presence of mainly leukocyte cells which are very small and rounded cells.

RESULTS

Number of Estrous Cycles

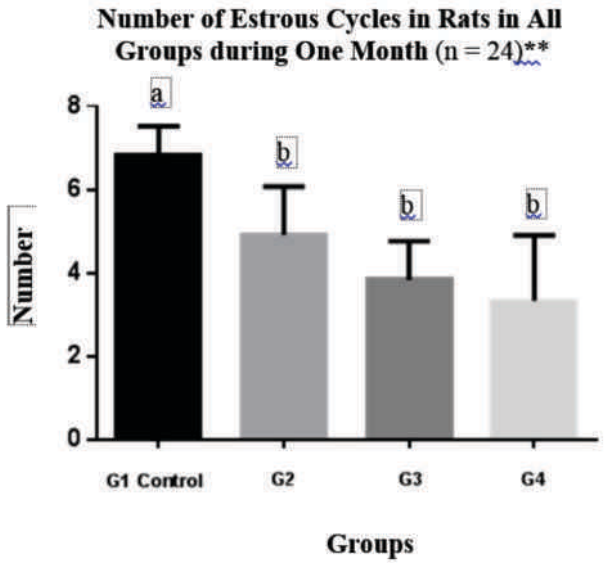
At the end of one month, the number of estrous cycles in each rat was calculated. The results revealed that there were 6.83 ± 0.68 estrous cycles in Control Group, 4.92 ± 1.16 in Group-2, 3.83 ± 0.93 in Group-3 and 3.33 ± 1.57 in Group-4. The data further revealed that there were highly significant differences among means of different groups. Groups 2, 3 & 4 significantly differed from Group 1 whereas Groups 2, 3 & 4 did not differ significantly among themselves (Table-1& Figure-6).

Table 1: *Number of Estrous Cycles in Rats during One Month (n = 24)*

	Groups			
	G_1	G_2	G_3	G_4
Means**	6.83[a]	4.92[b]	3.83[b]	3.33[b]
SD	±0.68	±1.16	±0.93	±1.57

** highly significant ($p < 0.01$).

Figure-6: *Graphical Representation of Number of Estrous Cycles Data*



** highly significant ($p < 0.01$).

Means bearing the same letter are statistically non-significant.

Proestrous Phase

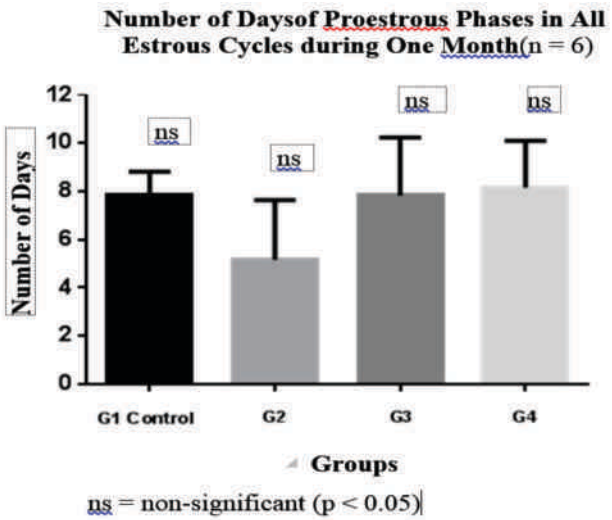
The data revealed that proestrous phase consisted of 7.67 ± 1.03 days in Control Group, 5.17 ± 2.48 in Group-2, 7.83 ± 2.40 days in Group-3 and 8.17 ± 1.94 days in Group-4. The results showed that the groups had insignificant variation among them (Table-2& Figure-7).

Table 2: *Number of Days of Proestrous Phases in All Estrous Cycles during One Month (n = 24)*

	Groups			
	G_1	G_2	G_3	G_4
Means	7.67[ns]	5.17[ns]	7.83[ns]	8.17[ns]
SD	±1.03	±2.48	±2.40	±1.94

ns = non-significant ($p < 0.05$)

Figure-7: *Graphical Representation of Proestrous Phase Data*



ns = non-significant ($p < 0.05$)

Estrous phase

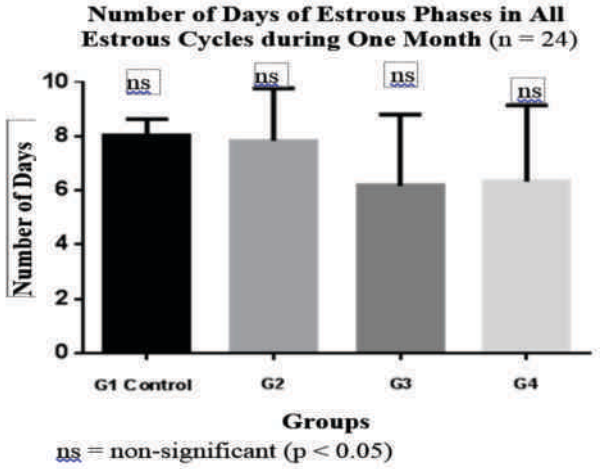
The data revealed that estrous phase consisted of 8.0 ± 0.63 days in Control Group, 7.83 ± 1.94 in Group-2, 6.17 ± 2.64 days in Group-3 and 6.33 ± 2.8 days in Group-4. The results showed that the groups had insignificant variation among them(Table-3& Figure-8).

Table 3: *Number of Days of Estrous Phases in All Estrous Cycles during One Month (n=24)*

	Groups			
	G_1	G_2	G_3	G_4
Means	8.00[ns]	7.83[ns]	6.17[ns]	6.33[ns]
SD	±0.63	±1.94	±2.64	±2.80

ns = non-significant at $p < 0.05$

Figure-8: *Graphical Representation of Estrous Phase Data*



ns = non-significant ($p < 0.05$)

Metestrous Phase

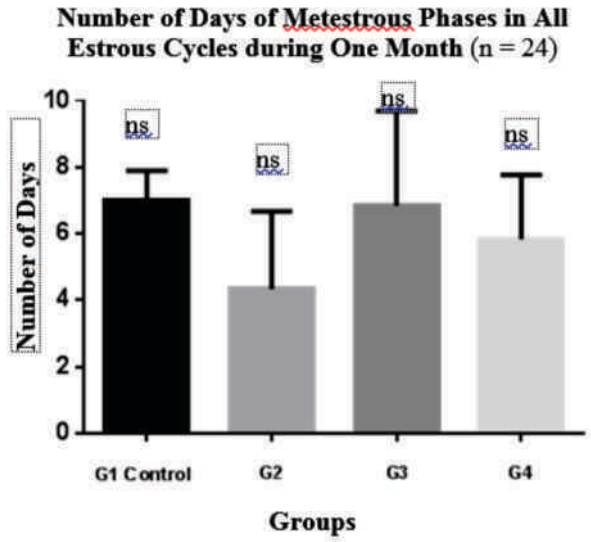
The data revealed that Metestrous phase consisted of 7.00 ± 0.98 days in Control Group, 4.33 ± 2.34 in Group-2, 6.83 ± 2.86 days in Group-3 and 5.83 ± 1.94 days in Group-4. The results showed that the groups had insignificant variation among them (Table-4& Figure-9).

Table 4: *Number of Days of Metestrous Phases in All Estrous Cycles during One Month (n = 24)*

	Groups			
	G_1	G_2	G_3	G_4
Means	7.00^{ns}	4.33^{ns}	6.83^{ns}	5.83^{ns}
SD	±0.89	±2.34	±2.86	±1.94

ns = non-significant ($p < 0.05$)

Figure-9: *Graphical Representation of Metestrous Phase Data*



Diestrous Phase

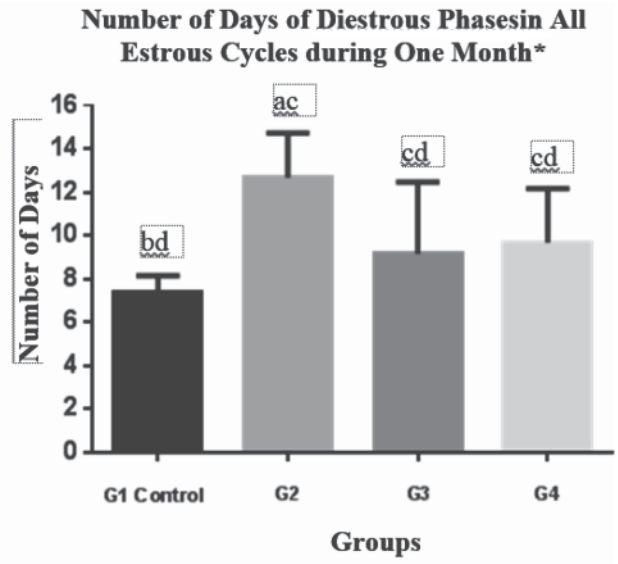
The data revealed that diestrous phase consisted of 7.33 ± 0.82 days in Control Group, 12.67 ± 2.07 in Group-2, 9.17 ± 3.31 days in Group-3 and 9.67 ± 2.50 days in Group-4. The results showed significant differences among groups. The post hocTukey's Multiple Comparison Test showed that number of days in Diestrous phase were significantly more in Group-2 as compared with Control Group. However, Group-3 and Group-4 insignificantly differed from Control Group (Table-5& Figure-10).

Table 5: *Number of Days of Diestrous Phases in All Estrous Cycles during One Month(n = 24)*

	Groups			
	G_1	G_2	G_3	G_4
Means	7.33^{bd}	12.67^{ac}	9.17^{cd}	9.67^{cd}
SD	±0.82	±2.07	±3.31	±2.50

* significant ($p < 0.05$).
Means bearing the same letter are statistically non-significant.

Figure-10: *Graphical Representation of Diestrous Phase Data*



Diestrous Index

The Diestrous Index was calculated with the help of the following formula:-

Diestrous Index =

$$\frac{\text{Number of days with clear diestrous smear} \times 100}{\text{Total duration of treatment (days)}}$$

Table 6: *Diestrous Index*

GROUPS	DIESTROUS INDEX**
G1	24.44^{bd}
G2	42.22^{ac}
G3	30.56^{cd}
G4	32.22^{cd}

** highly significant ($p < 0.01$).
Indicesfollowed by the same letter(s) are statistically non-significant.

The diestrous index has been 24.44 in Control Group, 42.22 in Group-2, 30.56 in Group-3 and 32.22 in Group-4. The groups showed highly

significant differences among themselves. The data revealed that Diestrous Index was lowest in Control Group (G1) whereas highest in Group-2 i.e. the rats fed with cottonseed oil obtained from insecticide free non-GM crop. In other two groups viz. G3 and G4, it also remained higher than the control.

DISCUSSION

The results showed that cotton seed oil, irrespective of the source i.e. whether obtained from insecticide free non-GM crop, insecticide sprayed non-GM crop or insecticide free GM (Bt) cotton crop, significantly reduced the number of estrous cycles in rats fed with cottonseed oil as compared to control. However, all the three oil treated groups differed insignificantly from one another, meaning thereby that all types of cottonseed oil have comparable effects on the number of estrous cycles. The effects leading to reduced number of estrous cycles in female rats fed with cottonseed oil might be due to other factors present in cottonseed oil. Our results are in conformity with the findings of Holly S. Bender et al., 198828 who reported decreased number of estrous cycles in rats treated with 60 mg/kg gossypol acetic acid for 30 days. Our results are also in line with Boyd and Krinjen, 197129 who found cottonseed oil to be toxic to rats by causing diarrhoea.

It has been revealed that, in general, the number of days in diestrous phase in all three oil treated rat groups have been more than control. However, the increase in number of diestrous days as compared to control was statistically significant in Group-2 only. The data suggested that the cottonseed oil derived from insecticide free non-GM crop disturbed the estrous cycle of the rats at diestrous phase in relation to the Control Group but the cottonseed oils derived from insecticide sprayed non-GM crop and insecticide free GM crop did not disturb the estrous cycle apparently at diestrous phase. Although there has been a significant reduction in number of estrous cycles in all oil treated groups compared to control, the effects of cottonseed oil on number of days in different estrous phases have not been exhibited individually at a statistically significant level. It might have been due to the fact that number of days in each phase was a fraction of total number of days of all estrous cycles. Our results are similar to Olabiyi et al., 2006[22] who noticed varying degrees of variation from the expected 2:1:1 ratio of number of diestrous: proestrous: estrous days while determining effects of various forms of cottonseed oil. However, our results are different from Akinola et al., 2006[30] who reported that cottonseed oil had not altered the estrous cycle and ovulation pattern in female Wistar rats. This may be attributed to 10-20 times lower dose used by Akinola et al. as compared to the dose used by Olabiyi et al. and in our study. As stated above, the cottonseed oils obtained from various sources including GM (Bt) source, have comparable toxic effects, our results endorse earlier reports of US Environment Protection Agency, that Bt microbial products pose no unreasonable adverse effects to humans or environment (EPA 1988a)[8] and that Bt has not been documented to cause any adverse effects on human health when present in drinking water or food (IPCS, 2000)[30].

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PREVALENCE AND ANTIBIOTIC SUSCEPTIBILITY OF ACINETOBACTERSPP IN WOUND SPECIMEN FROM JINNAH HOSPITAL, LAHORE

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ABSTRACT

Background: For the past two decades, Acinetobacter spp. has emerged as an important pathogen globally in various infections.

Objectives: This study was conducted to determine the frequency and antibiotic susceptibility pattern of Acinetobacter spp.

Materials and Methods: This retrospective cross-sectional study included a total of 110 wound samples collected from patients from Jinnah Hospital Lahore from Jan 2017 to March 2017. The samples were processed and identified by standard protocol. The Acinetobacter isolates were tested for antibiotic resistance by Kirby-Bauer disk diffusion method [according to the Clinical and Laboratory Standards Institute (CLSI) guidelines.

Results: From 110 wound samples, 87 (79%) showed significant growth of 87 positive cultures 20 samples(23%) showed growth of Acinetobacter,11(12.7%) KlebsiellaSpp22(25.3%) StaphylococcusSpp 18(20.6%) PseudomonasSpp and 16(18.4%) Escherichia coli. Out of 20 isolates of Acinatobacter, 13 (65%) were resistant to more than three classes of antibiotics (multidrug resistant) and 3 (15%) were resistant to all commonly used antibiotics (pan-drug resistant). Majority of the isolates were sensitive to Imipenem,Amikacin and Tigecycline and showed resistance rates of 45%, 50%, and 45%, respectively.

Conclusion: This hospital-based epidemiological data will help to implement better infection control strategies and improve the knowledge of antibiotic resistance patterns in our region.

Keywords: Acinetobacter species, antibiotics, frequency, resistance

Acinetobacter species are free-living and saprophytic bacilli that can be obtained easily from soil, water, food, and sewage.[1] These are aerobic, gram-negative, non-fermenter of glucose, and opportunistic pathogens that emerge as an important cause of hospital-acquired infections. Acinetobacter has undergone significant taxonomic modification over the last 30 years. Its most common and important representative is Acinetobacterbaumannii, and the other species such as Acinetobacterlwoffii, Acinetobacterjohnsonii, and Acinetobacterhaemolyticus are rarely isolated from patients.[2] Its great capacity to survive in low-moist environment coupled with its ability to develop resistance to antimicrobial agents can increase the possibility of spreading in hospitals.[3] The nosocomial infections caused by Acinetobacter include pneumonia, septicemia, wound sepsis, urinary tract infection, endocarditis, and meningitis.[4] In addition to infection among hospitalized patients, community-acquired Acinetobacter infection is increasingly reported.[5] There is a significant difference in the behavior and spread of multi-drug resistant Acinetobacter spprecovered various geographic locations.[6] Since several factors cause resistance in Acinetobacter spp., treatment of infections caused by this

organism should be based on antibiotic susceptibility tests. Therefore, having information regarding the prevalence and pattern of bacterial resistance to these drugs is important.[7,8]

MATERIALS AND METHODS

Study area, population, and methodology

A retrospective, hospital record–based, cross-sectional study was carried out from Jan 2017 to March 2017 in Pathology Department of Allama Iqbal Medical College Lahore. A total of 110 wound samples were collected. A retrospective evaluation of patient's age and sex was carried out on the basis of the case record histories. A healthcare-associated infection or nosocomial infection is defined as a localized or systemic condition resulting from an adverse reaction to the presence of an infectious agent (s) or its toxin (s) that was not present on admission to the hospital.[9]

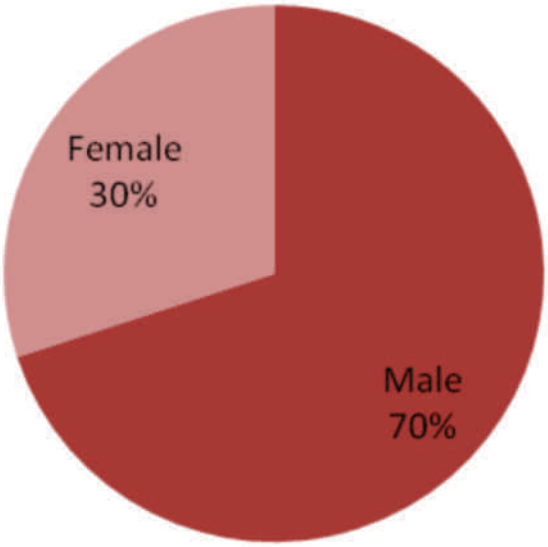
Sample processing and antibiogram

In the laboratory, all the collected samples were cultured aerobically on blood agar and MacConkey agar. All isolates were tested for antimicrobial susceptibility testing by the standard Kirby-Bauer disk diffusion method.10The following standard antibiotic disks were placed on the MHA plate: Augmentin (10 mcg), Ciprofloxacin (5 mcg), Amikacin (30 mcg), Ceftazidime (30 mcg), Imipenem (10 mcg),Ceftriaxone (30 mcg) and Tigecycline (15mcg). The plate was incubated at 37°C overnight. The zone of inhibition were measured and interpreted according to the Clinical and Laboratory Standards Institute (CLSI) guidelines.[11] The isolate was considered as highly resistant when it was resistant to Imipenem, Amikacin, and Augmentin. Multidrug-resistant (MDR) Acinetobacter spp. are defined as those isolates resistant to more than three classes of antibiotics. An isolate was classified as pan-resistant when it was resistant to all the commonly used antibiotics.[12]

RESULTS

Out of 110 samples, 77 were from males and 33 from females. Graphical representation of the gender wise distribution of samples is given in Figure 1.

Figure 1: *Gender wise distribution of samples*



During the study period from Jan 2017 to March 2017, a total of 110 wound samples were aerobically cultured, of which 87 (79%) yielded significant growth and rest of the samples 23 (21%) showed non-significant growth. Of 87 positive cultures 20 samples (23%) showed growth of Acinetobacter SPP,11(12.7%) Klebsiella SPP, 22(25.3%) Staphylococcus SPP, 18(20.6%) Pseudomonas SPP and 16(18.4%) Escherichia coli

Figure 2: *Proportion of wound samples positive for growth.*

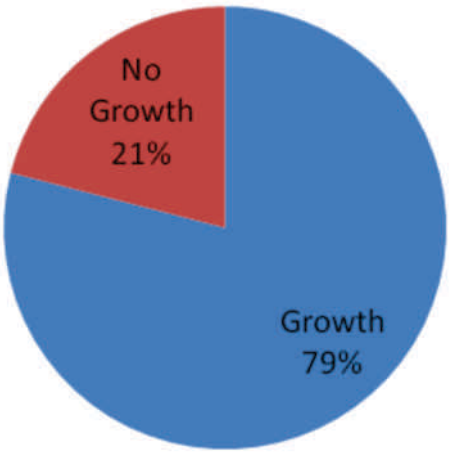


Figure 3: *Percentage of bacterial pathogens in wound specimens.*

In the present study, most of the Acinetobacter spp. were highly resistant to Ceftazidime (100%), Augmentin (100%), Ceftriaxone (90%), Ciprofloxacin (80%), Amikacin (50%),Imipenem(45%) and Tigecycline (45%) The low resistant patterns of imipenem (45%),Tigecycline(45%) and Amikacin indicate that they are effective drugs. The study showed that 100% isolates were multi-drug resistant.

Table 1: *Frequency of antibiotic resistance in Acinetobacter spp*

Antibiotics	Frequency	Percentage
Augmentin	20	100%
Ceftazidime	20	100%
Ceftriaxone	18	90%
Amikacin	10	50%
Ciprofloxacin	16	80%
Imipenem	9	45%
Tigecycline	9	45%

Table 2: *Antibiotic susceptibility of AcinatobacterSpp*

Susceptibility pattern	No of isolates	Percentage
Sensitive	4	20%
Multi drug resistant	13	65%
Pan drug resistant	3	15%

In our study, most of the isolates were multi-drug resistant. Only 20% were sensitive while 65% were multi-drug resistant and 15% were resistant to all the antibiotics.

DISCUSSION

Acinetobacter spare the second most common non-fermenting bacteria after Pseudomonas species that are isolated from human specimens, especially among nosocomial infections.[13] In recent years, this species has emerged as the causative agent of important nosocomial infections in the ICUs and emergency unit, which is probably related to the increasingly invasive diagnostic procedures used, the greater quantity of broad-spectrum antimicrobials used, and prolonged duration of stay in the hospital. Development of resistance against antimicrobials is a major problem in the treatment of Acinetobacter infections. Although they are considered as pathogen of mild virulence, they can rapidly acquire resistance.[14]

In our study, from 110 wound samples 20 (23%) Acinetobacter spp was obtained. In the present study, most of the Acinetobacter spp. were highly resistant to ceftazidime, augmentin, ceftriaxone and ciprofloxacin. The low resistant patterns of Imipenem, Tigecycline and Amikacin indicate that they are effective drugs. A similar result was obtained from a study conducted at a tertiary care hospital PIMS Islamabad from Feb 2011 to Dec 2011 where the prevelance of acineto was reported to be 16.48% in wound specimes. Most of the isolates were multi-drug resistant. The antibiotic susceptibility profile showed that minocycline and tigecycline were the most effective against A. baumannii.[15] A similar study was conducted at Institute of Molecular Biology and Biotechnology, The University of Lahore where the prevelance of Acinetobacter Spp in wound specimens was 25%. The multidrug resistance pattern showed 98.75% resistance to Ceftazidime,88.75% resistance to Ciprofloxacin, 97.5% resistance to Cefotaxime and 77.5% for imipenem It showed sensitivity to Tetracycline derivative i.e., Tigeycycline (52.5%).These results are similar to our results.[16] In a study conducted at Nizam's Institute of Medical Sciences, Hyderabad, Telangana, India the prevelance of Aacinetobacter Spp in wound specimens was 20 % while 77% isolates were MDR which is similar to our results.[17] Acinetobacter is ubiquitous in the hospital setting.

Its ability to survive for long periods coupled with its ability to demonstrate a number of antimicrobial resistance genes has made Acinetobacter a successful hospital pathogen.[3]

Most of the patients who were admitted in our hospital had previously attended primary and secondary care hospitals and usually received combination of β-lactam antibiotics like third- and fourth-generation Cephalosporins along with Aminoglycosides or Fluoroquinolones. Thus, majority of the isolates in our study were resistant to commonly used antibiotics such as Ceftazidime, Ceftriaxone, Amikacin, Ciprofloxacin and Augmentin. This means MDR isolates are increasing day by day, probably due to indiscriminate use of these antibiotics in healthcare settings. It is re-emphasized that broad-spectrum antibiotics should be used with caution. There are many measures that may impact on antimicrobial resistance; reducing and restricting the use of antimicrobials to only those situations where they are warranted, at proper dose and for the proper duration is the most appropriate solution.[18]

CONCLUSION

The high prevalence of the organism in clinical specimens together with its multidrug resistance has made Acinetobaumannii an important nosocomial pathogen leading to significant morbidity and mortality. A combination of a review of hand-washing practice, education about the spread of bacteria via hands and contaminated environment, and the revision of infection control procedures would help in the control of this organism in hospitals. To avoid resistance, antibiotics should be used judiciously and empirical antibiotic therapy should be determined for each hospital according to the resistance rates of that center. This should be regulated according to antibiogram results. Increasing Carbapenem resistance rates in Acinetobacter spp. leads to usage of new alternative antibiotics like Tigecycline.

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FREQUENCY OF SHISHA SMOKING AMONG MEDICAL STUDENTS OF AIMC

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ABSTRACT

Background: In the background of increasing popularity of shisha smoking, there is an urgent need for shisha to be better understood and acknowledged. Shisha is rapidly penetrating in young adult community especially students which is of a great public health concern. Shisha is considered as a risk factor for a number of systemic diseases.

Objective: The objective of this study was to determine the frequency of shisha smoking and to find out the factors and causes that lead to shisha smoking among medical students

Material and Methods:

Study Design: Cross Sectional study.

Study Setting and duration: AIMC, Lahore and duration was March-June 2014.

Inclusion criteria: Medical students of all five years of MBBS.

Data Collection and analysis: Following informed consent, data was collected by filling of a structured questionnaire by the participants. This was analyzed using SPSS version 17. Frequency %, mean and SD were calculated accordingly. Chi-square was applied and P value <0.05 was considered statistically significant.

Results: People included in sample were 300 medical students out of which 170 (56.7%) were females and 130 (43.3%) were males. Regarding the frequency of shisha smoking, 3% smoked daily, 0.7% smoked weekly, 2% monthly and 6.7% were the ones who smoked occasionally. Students who have tried shisha at least once stated that they did it out of curiosity (66.2%) and the rest tried it due to peer pressure (33.8%).

Conclusions: Mostly students start shisha smoking due to peer pressure or try shisha at least once because their friends forced them.

The water pipe, also known as shisha, hookah, narghile, goza and Hubble bubble is a general term given to an apparatus where tobacco is inhaled after passing through water. In recent years, shisha smoking has been witnessing a surge in popularity, especially among the youth. The allure of this tobacco use method for the youth has stem from its pleasant smooth smoke, social ambience and the false perception of reduced harm. (Maziak W, 2010) [1].

In 2005, the World Health Organization (WHO) produced an advisory note on shisha's growing public health concern, including suggested actions for regulators. Due to the idea that shisha is associated with many of the risks as cigarette smoking, legislatively the WHO recommended that shisha should be subjected to the same regulations as cigarette and other tobacco products including implementation of strong health warnings and prohibition of its use. (Kamal M, 2013) [2].

Several researches have been conducted regarding this topic highlighting the harmful effects of shisha smoking which consists of higher risk of developing lung cancer, respiratory illnesses. Complications in pregnancy and low birth weight are also seen if shisha is smoked by pregnant women. It has become a status symbol and our youngsters take it as a sort of fashion and later become addicted to it because of the high nicotinic content.

Operational definition: Shisha is tobacco for smoking in a hookah, especially when mixed with flavourings such as mint. The WHO advisory note states that a "shisha smoker inhales as much smoke

during one session as a cigarette smoker would inhale consuming 100 or more cigarettes".

Statistical Analysis: Data was analyzed using SPSS Version 17. Frequency and percentages were calculated for shisha smoking and factors contributing, mean and standard deviation were calculated for numerical variables like age, duration of smoking.

RESULTS AND MAIN FINDINGS:

Graph 1:

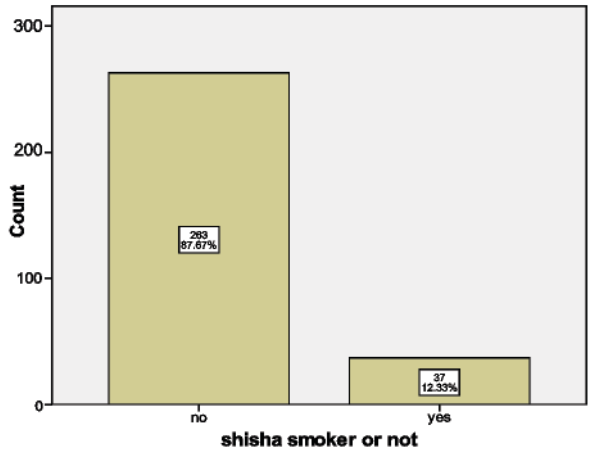

Table 1: Frequency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NA	263	87.7	87.7	87.7
	daily	9	3.0	3.0	90.7
	weekly	2	.7	.7	91.3
	monthly	6	2.0	2.0	93.3
	occasionally	20	6.7	6.7	100.0
	Total	300	100.0	100.0	

Graph 2

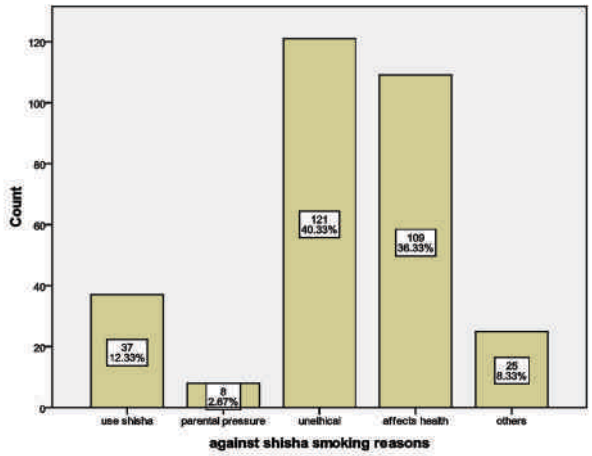

Table 2: immediate effect of shisha

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Relaxed	14	37.8	37.8	37.8
	Euphoric	13	35.1	35.1	73.0
	sleepy/drowsy	8	21.6	21.6	94.6
	Others	2	5.4	5.4	100.0
	Total	37	100.0	100.0	

Graph 3

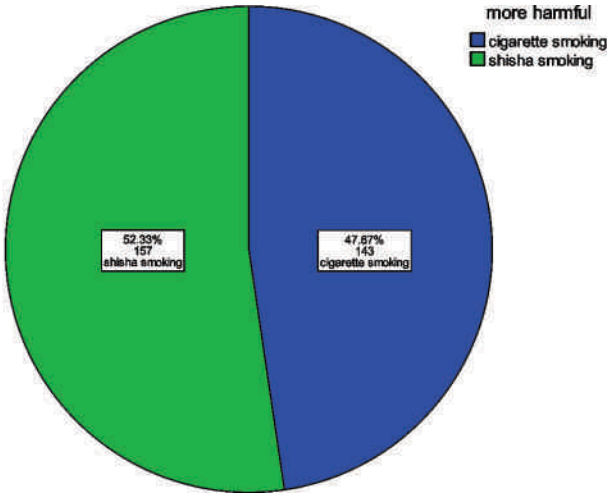

Table 3: intend to smoke shisha

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	250	83.3	83.3	83.3
	Yes	50	16.7	16.7	100.0
	Total	300	100.0	100.0	

RESULTS:

People included in sample were 300 medical students out of which 170 (56.7%) were females and 130 (43.3%) were males. There were 60 respondents from each of the five classes of MBBS making it a 20% contribution from each class. 92.7% people said that they had heard of shisha smoking while 7.3% replied that they haven't heard about shisha smoking. 37 students (12.3%) were shisha smokers while 263 students (87.7%) were not. Regarding the frequency of shisha smoking, 3% smoked daily, 0.7% smoked weekly, 2% monthly and 6.7% were the ones who smoked occasionally.

One of the most important question regarding

reasons against shisha smoking was asked and the replies which came showed the unethical reason at the top with 40.3% replies, next in number with 36.3% replies which was due to effects on health. 2.7% replies showed that these people were against shisha smoking due to parental pressure while 8.3% replies stated "otherwise".

Students who have tried shisha at least once stated that they did it out of curiosity (66.2%) and the rest tried it due to peer pressure (33.8%). 52.3% people were of the opinion that shisha smoking was more harmful than cigarette smoking while 47.7% of the students thought it the other way round. Moving ahead, 80.7% students were aware of the fact that shisha consists of tobacco plus a flavouring ingredient but 12.7% of the people thought that it consists of flavouring ingredient only. The rest of the 6.7% didn't have any idea regarding the constituents.

Out of the smokers, 75.7% of the students liked to smoke in company while 24.3% preferred smoking alone. When the smokers were asked as to why did they start smoking in the first place then they stated that they did it mostly out of curiosity (7.3%), due to peer pressure (2.3%), out of stress (1.3%) and the rest stated "otherwise" (1.3%). 83.3% of the students had no intention to smoke shisha in the future or whenever they get an opportunity while 16.7% of the people stated they would like to try shisha in the future.

DISCUSSION:

The present study focuses on the frequency of shisha smoking among medical students of AIMC and it has been pleasant to find out that majority of the students are non smokers and most of them are aware of the fact that shisha smoking is more harmful as compared to cigarette smoking. However, the students still think that it is a status symbol nowadays. This study was compared with other studies and it was found out that in previous study regarding perception of shisha smoking among university students in Pakistan, there was a disturbing observation that shisha smoking is prevalent in those students. The knowledge of university students regarding the habitual shisha smoking was found to be alarmingly low and also majority considered the practice to be safer as compared to cigarette smoking which is contradictory to the present day study (Masood Z, 2013). Perhaps this contradiction was due to the fact that this present day study takes a sample of medical students who are already well aware of the ill effects of shisha smoking.

Our study focuses on the factors that led to shisha smoking among students and these include mostly curiosity and peer pressure. This similar finding was also observed in another previous study regarding shisha smoking among medical students where most of the students started smoking because their friends smoked or their friends forced them to try smoking. The previous study also focused on the fact that most of the students knew what exactly shisha smoking meant and this is similar to our findings where most of the students are aware of the fact that what exactly is shisha smoking. Apart from that, people who were shisha smokers usually smoked shisha occasionally in both the present and the previous study. (Aurangzeb, 2009).

Our study proved a point that most of the students were aware of the fact that shisha consists of both tobacco and the flavouring ingredient which is contradictory to other studies such as those observed in San Francisco where people are not aware of the fact that tobacco is actually burnt inside the water pipe (Ahmed B, 2011).

Regarding the topic of immediate effects of shisha, the smokers conveyed to us that after smoking shisha, they mostly felt relaxed, slightly euphoric and drowsy. This finding was similar to the one observed in a study in India that mostly shisha smokers over there too felt relaxation and euphoric after consuming shisha (Kadodkar P, 2013).

Another important point regarding the smokers is that they like to smoke in company and that is similar to other previous studies as well. Surprisingly in our study we found out that there are a lot of

students who intend to smoke in the near future because they are curious to find out what shisha tastes like and this was also found in all previous researches aswell. (Chaouachi K, 2009).

A number of students in our study have tried shisha at least once mostly out of curiosity and peer pressure which is similar to old studies as well and when asked about the reasons as to why the students are against shisha smoking, mostly replied that they thought that it was unethical and some also said that it affects health and a few didn't smoke because of parental pressure. This is somewhat similar to the previous studies in which the factor regarding the ill effects on health has been number one and other reasons include personal choice and parental pressure etc (Primack B, 2013). Thus keeping in view all of the previous studies and the present one; shisha smoking might have declined but the reasons leading to it and its effects etc all remain the same.

CONCLUSION:

- Most of the medical students know the hazards of shisha smoking and also that it is more harmful as compared to cigarette smoking.
- Mostly students start shisha smoking due to peer pressure or try shisha at least once because their friends forced them. Steps should be taken to involve students in recreational activities.
- A number of students intend to smoke shisha thus tobacco control programme should be conducted in colleges and awareness must be created.

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FOSFOMYCIN; A BETTER CHOICE AGAINST BACTERIA CAUSING URINARY TRACT INFECTIONS.

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Urinary tract infections (UTIs) are among one of the most common bacterial infections in humans both in the community and hospital setting.[1] In most of the cases there is need tostart treatment before the final culture results are available. Institution and area specific monitoring studies are aimed to gain knowledge about the type of pathogens responsible for UTIs and their antimicrobial susceptibility patterns may help the clinician to choose the right empirical treatment. Many different antimicrobial agents are available to treat UTIs including oral as well as injectable antimicrobials.

Fosfomycin, was discovered in Spain in 1969. It is available in both forms, orally as well as systemically. Fosfomycin trometamol and fosfomycin calcium are the two oral available forms of the drug whereas, fosfomycin disodium is available as intravenous form. It is a broad spectrum antimicrobial agent with activity against various gram-positive as well as gram-negative bacteria which includes staphylococci, enterococci, E.coli and other gram-negative bacteria[2,3]. It is a bactericidal antibiotic which interferes with cell wall synthesis by inhibiting phosphoenolpyruvate transferase which is the first enzyme involved in the peptidoglycan synthesis[2]. There is no cross resistance of this antibiotic with others and it can be administered safely in combination with many other antibiotics[2,3].

Fosfomycin has very good oral absorption with a bio-availability of 40% and majority of the drug is excreted unchanged in urine with very high concentration levels achieved in urine after a single oral dose [2].

Renal elimination of Fosfomycin is of 95% and no tubular secretion occurs[3]. It has a relatively long elimination half-life, which varies between 4 and 8 hours[3]. Urine levels remain high for prolonged period which makes it a suitable drug for the treatment of UTI. Besides urine, Fosfomycin has good distribution into tissues, achieving clinically relevant concentrations in serum, kidneys, bladder wall, prostate, lungs, inflamed tissues, and other body fluids [2-5].

E.coli is the most common organism causing the UTIs [1]. With the inappropriate and inadvertent use of higher antibiotics, antimicrobial resistance emergence among these bacterial isolates has lead to difficulty in treating these infections. As the antibiotic pipeline is getting empty with only few alternatives available for treating these resistant infections, old antibiotics like fosfomycin, nitrofurantoin, colistin have gained importance recently again[6-7]. In the present study we have evaluated the antibacterial activity of fosfomycin against isolates causing UTIs.

MATERIALAND METHODS

This cross sectional study was conducted at Microbiology department, Combined Military Hospital, Lahore, from January 2014 to October 2014. Midstream Urine specimens collected from different wards like surgical wards, medical wards, ICU, gynaecology ward, urology ward and also from outpatient department were included in this study. Specimens from the both the genders were included in this study. Repeat specimens during same episode of illness, specimens having mixed growth, specimens from urine collection bag and Folleys catheters tips were excluded from the study. All urine speci-

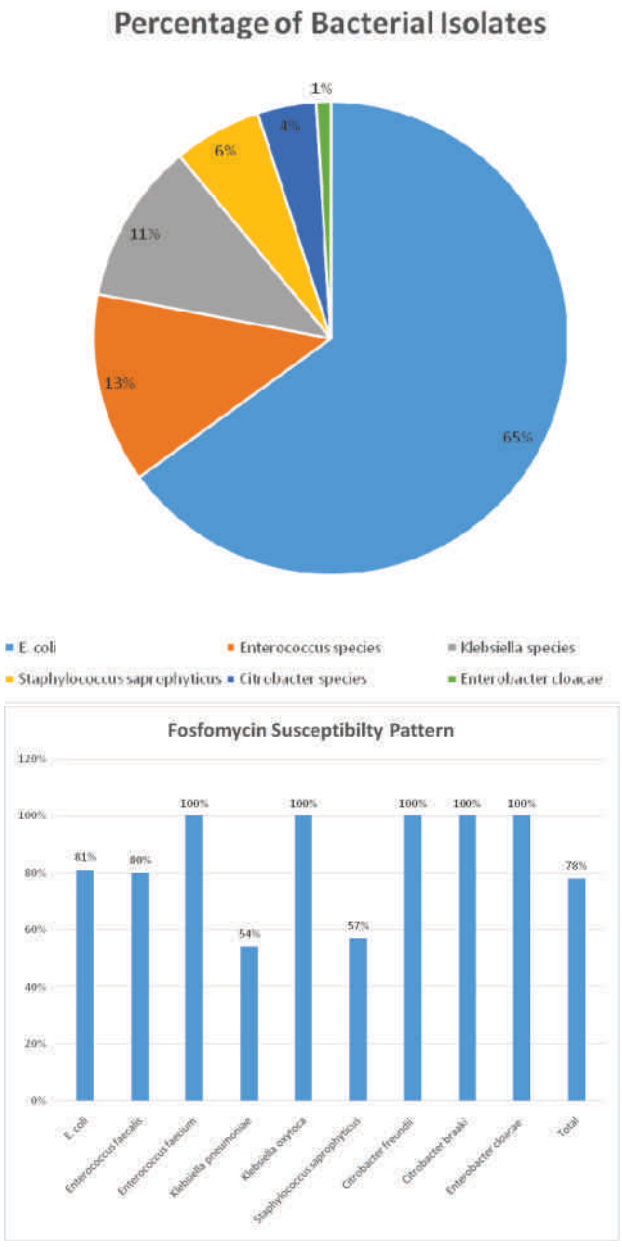
mens were cultured on CLED agar according to WHO protocol.[8] A total of 124 isolates including Gram negative bacilli and Gram positive cocci were included in this study. Gram negative rods which are intrinsically resistant to fosfomycin like Acinetobacter baumanni were excluded from this study.[9] Bacterial isolates were identified on the basis of colonial morphology, Gram staining, Catalase test, coagulase test, Oxidase test, and biochemical profile using API 20 E and API 20NE. Antimicrobial susceptibility testing was performed by using standard modified Kirby bauer disc diffusion method. Zone sizes were interpretedfollowing CLSI 2014 guideline. 200-µg Fosfomycin disc was used and zone diameter ≥ 16 mm was considered susceptible.[9]

RESULTS

A total of 124 isolates were included in this study during study duration. 108 isolates were Gram negative rods and 16 were Gram positive cocci. Out of 81 isolates of Escherichia coli 81%(66) were susceptible to Fosfomycin, out of 15 isolates of Enterococcus faecalis 80% (12) were susceptible to Fosfomycin, one isolate of Enterococcus faecium was susceptible (100%) to Fosfomycin, out of 13 isolates of Klebsiella pneumoniae 54 % (7) were susceptible to Fosfomycin and one isolate of Klebsiella oxytoca was susceptible (100%) to Fosfomycin, out of 7 isolates of Staphylococcus saprophyticus 57% (4) were susceptible to Fosfomycin, 4 isolates of Citrobacter freundii were susceptible (100%) to Fosfomycin and one isolate of Citrobacter braaki and Enterobacter cloacae each were susceptible(100%) to Fosfomycin. Out of total 101 Gram negative rods 79% (80) were susceptible to fosfomycin. Out of total 23 Gram positive cocci 74%(17) were susceptible to fosfomycin. Out of total 124 isolates 78% (97) were susceptible to Fosfomycin.Out of 81 isolates of Escherichia coli,four wereextended spectrum beta lactamase (ESBL) producer, all of them were susceptible to fosfomycin. Out of 13 isolates of Klebsiella pneumonia, only one was ESBL producer and it was susceptible to fosfomycin. So all ESBL producing gram negative rods were susceptible to fosfomycin.

DISCUSSION

Fosfomycin is very good option for urinary tract infections. It has many advantages over other drugs like single dose therapy is required for uncomplicated UTI. Resistance to Fosfomycin is very low. It is active against both Gram positives as well as Gram Negative organisms. It do not posseses cross resistance with Beta lactam drugs. It is active



against even multidrug resistant (MDR) isolates. It was active against ESBL producing fours isolate of Escherichia coli and one isolate of Klebsiella pneumoniae.

In our study,out of total 124 isolates 78% (97) were susceptible to Fosfomycin. Out of total 101 Gram negative rods 79% (80) were susceptible to fosfomycin. Out of total 23 Gram positive cocci 74%(17) were susceptible to fosfomycin

So many studies have been conducted on fosfomycin against organism causing urinary tract infections. Neuner et al conducted a study on fosfomycin against MDR urinary isolates in 2012.[10]. Fosfomycin was susceptible to 86% of urinary isolates. These isolates included both Gram positives as well as Gram negatives like Enterococcus species, Pseudomonas aeruginosa, Escherichia coli, Klebsiella species. Most of the isolates were MDR including 13 carbapenem-resistant Klebsiella pneumoniae, 8 Pseudomonas aeruginosa, and 7 vancomycin-resistant Enterococcus faecium (VRE) isolates, 7 extended-spectrum beta-lactamase (ESBL) producers. Like our study most of the isolates (86%) were susceptible to fosfomycin. [10]

Maraki et al conducted a study from Greece in 2009.[11] A total 578 urinary isolates were included in this study. Both Gram positives as well as gram negatives were included in this study. Over all more than 89% of theses isolates were susceptible to fosfomycin. These results are even better than our study results. In this study fosfomycin was susceptible to most of the MDR isolates including Vancomycin resistant Enterococci (VRE) , Methicillin resistant Staphylococcus aureus (MRSA), ESBL producing Gram negative rods. [11]

Matthewset al conducted a study in 2016. Among all urinary isolates tested during study duration, fosfomycin resistance was documented in 1 % of E. coli vs. 19 % of Klebsiella spp. They only tested Gram negative rods. Even these results are better than our study results in terms of resistance of fosfomycin. [12].

Noor et al conducted a similar study on urinary isolates in 2004 from Karachi, Pakistan. In this study 94% isolates were susceptible to fosfomycin. This study included only 56 Gram negative rods, most of them were MDR. In comparison our study included both Gram positive as well as Gram negative isolates and sample size of our study is more than double of this study. [13]

Wali et al conducted a study from Rawalpindi, Pakistan, in 2016. This study included 200 Gram Negative urinary isolates. Out of which 97 were MDR and 103 were non MDR. Fosfomycin susceptibility was better among MDR urinary isolates. 98% of MDR Isolates were susceptible to fosfomycin as compared to non MDR isolates. Fosfomycin susceptibility in this study is much better than our study especially against MDR isolates. [14]

Khan et al conducted a study on ESBL producing Gram negative rods causing urinary tract infections from Rawalpindi Pakistan in 2014. A total of 381 isolates were included in this study. Results were comparable with our results, as 84% of these ESBL producing isolates were susceptible to fosfomycin. In our study, all isolates were not ESBL producer but those who were ESBL producer were 100% susceptible to fosfomycin as compared to over 78% susceptibility of fosfomycin. [15]

Fosfomycin is a very good option for uncomplicated urinary tract infections.It is easy to administer as single oral dose. It is more active against MDR isolates. So it is proved to be better option where we are left with limited choices.

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FREQUENCY AND DETERMINANTS OF ASTHMA

A study conducted at Allama Iqbal Medical College / Jinnah Hospital, Lahore.

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ABSTRACT

Background: Asthma is a major cause of disability, health resource utilization and poor quality of life worldwide. We set out to generate estimates of the frequency of asthma in medical students of a public medical college and also to identify the factors implicated in its causation, exacerbation and remission so that effective measures can be taken for its optimum control.

Objective: To determine the frequency of asthma and to identify the factors associated with it in medical students of Allama Iqbal Medical College Lahore. To test whether the association between family history of asthma and frequency of asthma in medical students is significant or not.

Methodology: It is a cross sectional analytical study. The study was conducted in Allama Iqbal medical college; Lahore which is a government institution affiliated with Jinnah hospital. 300 medical students of Allama Iqbal Medical College, Lahore (1st year-5th year) were included in the study.

Results: Of the 300 participants the age on average was 20.9 years of which 58.67% were females and 41.33% were males, 11.3% of the total students were asthmatics and 44% of these asthmatics had a positive family history for asthma.

Conclusions: Asthmatic medical students have a good awareness about asthma and they undergo periodic medical checkups due to good available health facilities however they do not take medications regularly.

Key words: Asthma, Wheezing, Chest tightness, Nocturnal chest tightness, Family history of asthma, Obesity, Smoking

Asthma is a chronic inflammatory disease characterized by reversible airway obstruction, increased sensitivity of the airway to allergens, smooth muscle hypertrophy and hyperplasia of the mucosal glands of the airway[12]. Common symptoms include wheezing, coughing, chest tightness, and shortness of breath[16].

The prevalence of asthma is increasing worldwide. About 300 million subjects are currently having asthma. It affects both sexes and almost all ages. The male to female ratio is about 1.5 in children, 1.0 in late adolescence and less than 1.0 in adults, when more females have symptoms.[23]

According to the world health survey conducted by WHO , the global prevalence rates of doctor diagnosed asthma, clinical/treated asthma and wheezing in adults were 4.3%, 4.5%, and 8.6% respectively, and varied by as much as 21-fold amongst the 70 countries. Australia reported the highest rate of doctor diagnosed, clinical/treated asthma, and wheezing (21.0%, 21.5%, and 27.4%).Amongst those with clinical/treated asthma, almost 24% were current smokers, half reported wheezing, and 20% had never been treated for asthma [17].

According to a study conducted by students of Army medical college Rawalpindi, male prevalence came out to be 6.29% , female 12.02% and overall 9.2 % .[3]

The diagnosis is made clinically by physicians[12]. However, the lack of a clinical definition of asthma coupled with the absence of optimum standardized tools have made it difficult to conduct epidemiological studies in an effective manner and consequently have resulted in its under diagnosis [3].

Asthma is caused by a complex interaction between genetic and environmental factors.[14] Asthma can be triggered by dust, allergens, anxiety,

cigarette smoking and infections by different microbial organisms[6]. The famous hygiene hypothesis attributes the development of asthma in children to the reduced exposure to bacterial and viral pathogens early in life.[3]

Disturbed sleep accompanied by nocturnal awakening is a common symptom amongst asthmatic patients. This is associated with increased absence from work and as a result the patient resorts to using reliever medications more frequently to prevent the symptoms from exacerbating.[8]

A positive correlation exists between cigarette smoking and asthma as smoking has induced asthma in previously non atopic individuals. [2,4]

The role of dietary factors in the causation of asthma remains uncertain however it has been observed that a decrease in the consumption of vegetables has been responsible for the increase in the incidence of asthma. Although several foods are implicated in the development of allergy in asthmatic patients but peanuts, fish and tree nuts are of paramount importance. [22]

Exposure to pets has been implicated as a risk factor for asthma.

However, this relationship has been difficult to assess in individual studies because of a possible selection bias. [11]

The rising trend of obesity is particularly alarming because a strong correlation exits between obesity and the increase in the severity of asthma[10]. Stress also has important implications. [13,15]

In response to increasing mortality rates associated with asthma in Europe and elsewhere, European commission funded the development of European community Respiratory health survey (ECRHS).[12] Questionnaires have been beneficial in determining the prevalence of asthma as they are well received by the general population.[3]

METHODOLOGY

This cross sectional analytical study was conducted in Allama Iqbal medical college Lahore which is a government institution affiliated with Jinnah hospital. 300 medical students of Allama Iqbal Medical College, Lahore (1st year-5th year) were included. The study last for one month. Non probability / purposive sampling was used.

DATA COLLECTION PROCEDURE:

Data was collected using self-administered anonymous questionnaires. The questionnaire was designed keeping in consideration the questions asked in the EUROPEAN COMMUNITY RESPIRATORY HEALTH SURVEY II. The questions were close ended in nature in order to invoke a definitive reply from the students.

DATA ANALYSIS PROCEDURE:

SPSS 17 was used for this purpose. Demographic and asthmatic status data was summarized using descriptive statistics. Categorical variables were reported using frequencies, while continuous data was analyzed using means and standard deviation. In addition we also used pie charts and bar charts to show the extent to which different risk factors are associated with asthma amongst the student population. We also performed the Chi square test to test whether the association between family history of asthma and frequency of asthma in medical students is significant or not.

RESULTS AND MAIN FINDINGS:

Graph 1: *Consultation to physician for asthma in*

Table 1: *Diagnosed by a doctor for asthma n=300*

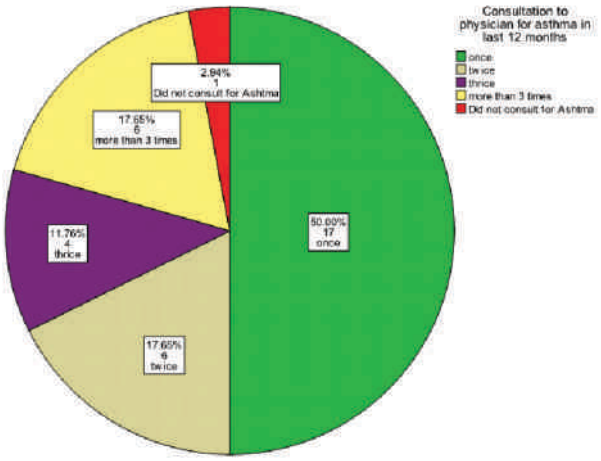
Asthma status	Frequency	Percent
No	266	88.7
Yes	34	11.3
Total	300	100.0

Table 2: *Symptoms of asthmatics n=34*

Symptoms	Responses	
	N	Percent
Chest tightness at night in last 12 months	26	76.5
Shortness of breath in last 12 months	31	91.2
wheezing or whistling in chest at anytime in last 12 months	29	85.3
Shortness of breath following strenuous exercise in last 12 months	26	76.5

Table 3: *Risk factor frequencies of asthmatics n=34*

Risk Factor	Responses	
	N	Percent
Family history	15	44.1
Nasal allergy	22	64.7
Smoking	1	2.9
Trees, grass or flowers	25	73.5
Stressed	27	79.4
Outdoor pollution	24	70.6
Carpets, rugs or mats	17	50
Near animals	16	47.06



last 12 months

CHI SQUARE TEST:

To determine whether the association between family history of asthma and frequency of asthma in medical students is statistically significant or not

NULL HYPOTHESIS=

FAMILY HISTORY OF ASTHMA	*STUDENT HAS ASTHMA*	*STUDENT DOES NOT HAVE ASTHMA*	TOTAL
PARENTS OR SIBLINGS HAVE ASTHMA	15	8	23
PARENTS OR SIBLINGS DO NOT HAVE ASTHMA	19	258	277
TOTAL	34	266	300

THERE IS NO SIGNIFICANT ASSOCIATION BETWEEN ASTHMA IN MEDICAL STUDENTS AND A POSITIVE FAMILY HISTORY OF ASTHMA (ASTHMA IN PARENTS OR SIBLINGS)

ALTERNATIVE HYPOTHESIS=

THERE IS A SIGNIFICANT ASSOCIATION BETWEEN ASTHMA IN MEDICAL STUDENTS AND A POSITIVE FAMILY HISTORY OF ASTHMA (ASTHMA IN PARENTS OR SIBLINGS)

CHI SQUARE CALCULATED VALUE

$$= \sum (O-E)^2/E$$

$$= 71.98$$

Since the calculated value of chi square which is 71.98 is greater than the table value of 3.84 at d.f=1 and p<0.05(value of p is 0.00) thus the null hypothesis is rejected and there is a statistically significant association between doctor diagnosed cases of asthma and a positive family history of asthma.

RESULTS:

A total of 340 questionnaires were randomly distributed amongst students of AIMC out of which 300 were returned, response rate being 88.23%. Of the 300 participants, the average age was 20.9067 years, the standard deviation was 1.447 years and 67 % of the students belonged to the 20-22 year age group. Out of these 300 students, 58.67% were female and 41.33% were male. Of the 300 students, 44.33% were day scholar whereas 55.67% were boarder.

34 students (11.3%) were found to have doctor diagnosed asthma. However, we also asked questions regarding wheezing, chest tightness and nocturnal awakening from students. Since many patients have asthmatic symptoms however they do not have doctor diagnosed asthma as they don't consult physicians, the primary reason being that people fear lifelong treatment of asthma. 11.7% reported an attack of chest tightness that led to nocturnal awakening.14.3% of the students reported an attack of wheezing in the last 12 months.15%

reported shortness of breath at rest. In addition 16.7% of the students reported shortness of breath following strenuous exercise in the last 12 months.

Now after determining that there were 34 doctor diagnosed asthmatics, we then analyzed the factors which were associated with asthma in these patients. The frequency of asthma turned out to be higher in female students as almost 62% of the asthmatic students were females. The frequency of asthma in boarders turned out to be almost 65% which is slightly higher considering the fact that 55.67% of the students were boarders, the rest being day scholars.

Family history plays a key role in the pathogenesis of asthma as almost 44% of asthmatics reported that their parents or siblings have asthma.

Chest tightness leading to nocturnal awakening which is an important pathognomonic sign of asthma was reported by an overwhelming 77% of asthmatics, however shortness of breath turned out to be the most common symptom as it was reported by 91% of the students. Wheezing was reported by nearly 85% of the students, making it the second most common symptom.

Asthma is usually accompanied by concomitant nasal allergy and nearly 65% of the students had a positive history of nasal allergy, however the exact allergen causing the allergy was not investigated since it requires specialized radioallergosorbent tests.

The highest frequency of asthma attacks (44%) were reported in the months of March / April followed by January / February and November/ December. July / August and September/October reported the least number of attacks.

Outdoor pollution in the form of dust and smoke is known to trigger asthma attacks and nearly 71% of the asthmatics reported that they suffer from increased severity of asthma when they keep their windows open.

Stress reduction is an important agent in the prevention and subsequent decrease in severity of asthma. Almost 80% of the students believed that stress is a major factor in their poor asthma control.

It was encouraging to see that only 20 percent of the diagnosed asthmatics were overweight and none was obese.

Nearly 40% of the students said that they did not take any asthmatic treatment in the form of inhalers, steroids or oral tablets. 97 percent of the patients consulted their physicians for asthma in the last 12 months. Emergency hospital visits were reported to be 44%.

Smoking increases severity of asthmatic symptoms since it is associated with chronic bronchitis and emphysema which like asthma are obstructive pathologies of the lung, however a mere 3% of the students who were asthmatics said that they were smokers.

DISCUSSION:

The purpose of this study was to evaluate the frequency of asthma amongst medical students of Allama Iqbal Medical College Lahore and then to determine the extent to which different factors are associated with it.

34 students (11.3%) were found to have doctor diagnosed asthma. However we also asked questions regarding wheezing, chest tightness and nocturnal awakening from students since many patients have asthmatic symptoms however they do not have doctor diagnosed asthma because they do not consult physicians, the primary reason being that people fear lifelong treatment of asthma 11.7% reported an attack of chest tightness that led to nocturnal awakening.14.3% of the students reported an attack of wheezing in the last 12 months. 15% reported shortness of breath. Since the variation between doctors diagnosed asthma and other asthmatic symptoms is less this means that students have access to good health facilities and are aware of the consequences of not getting their asthma treated .The improved diagnosis is a reflection of easy access to Jinnah hospital which is located nearby. These results are similar to a study conducted by

students of Army medical college Rawalpindi in which wheezing turned out to be 17.8%, 13.2% subjects documented tightness of chest and 10.74% shortness of breath respectively. [3]

The frequency of asthma turned out to be higher in female students as almost 62% of the asthmatic students are females. This is understandable since 59% of college students are females. In addition globally asthma is more prevalent in the female gender. A similar study conducted amongst university students of Khartoum, Sudan revealed 57% of asthmatics to be women and just like our study women constituted a greater proportion of the student population. [23]

The greatest numbers of asthma attacks (44%) were reported in the months of March / April followed by January / February and November/ December. The increased frequency in March / April correlates with the generalized increase in the pollen content of the atmosphere. Cold temperature has long been considered an important agent in the exacerbation of pathologies of the respiratory tract and possibly accounted for the increased frequency in the winter months. July/August and September/ October reported the least number of attacks.

Smoking although increases severity of asthmatic symptoms since it is associated with chronic bronchitis and emphysema which like asthma are obstructive pathologies of the lung however a mere 3% of the students who were asthmatics said that they were smokers. This result of our study is highly inconsistent with the world health survey conducted by WHO which reported that 23.5% of asthmatics are smokers.[17] This could be either due to increased awareness of medical students about the adverse effects of smoking and hence lesser consumption of cigarettes or it is also possible that they do not want to disclose it.

It was encouraging to see that only 20 percent of the diagnosed asthmatics were overweight and none was obese reflecting the fact that students are conscious of their weight as obesity is associated with poor asthma control and possible future complications of the cardiovascular system. Our results when compared with a study conducted in South Carolina are highly inconsistent because nearly 50 percent of the diagnosed asthmatics were obese. This variation could be due to international differences in food consumption and exercise patterns and could also be because of the fact that the study in Carolina was conducted on nearly 12000 people which is a significantly larger sample size as compared to our sample of only 300 students. [24]

Family history plays a key role in the pathogenesis of asthma. In our study 44% of asthmatics reported that their parents or siblings have asthma. A study conducted at Isra University Hospital between September 2005 to August 2006 also showed that almost 70 percent of asthmatic children had a positive family history of asthma. Yahya et al. showed 47% of asthmatic children to have a positive family history of asthma.[14] In another study from Hyderabad by Sheikh et al. 50% asthmatic children had a positive family history.[16] In order to further check the significance of the association between family history of asthma and frequency of asthma in medical students we performed the chi square test. The p value was set at 0.05. Since the calculated value of chi square which is 71.98 is greater than the table value of 3.84 at d.f=1 and $p<0.05$, thus the null hypothesis is rejected and there is a statistically significant association between doctor diagnosed cases of asthma and a positive family history of asthma.

Presence of carpets and rugs have also been implicated in the pathogenesis of asthma since they have a tendency to trap dust mites. Almost 62% of the asthmatics reported that their symptoms were aggravated in the presence of carpets. This association is much higher than a similar study conducted at Isra university hospital in which 24% reported association of exposure to rugs and carpets with asthma.[14] The marked difference might be explained on the basis of the fact that since majority of students live in hostels and almost all the rooms are carpeted so there is an increased association

between the two.

Stress reduction is an important agent in the prevention and subsequent reduction of asthma severity .Since medical students live under constant stress because of their rigid and tough coursework so they are more likely to experience increased asthmatic attacks. Almost 80% of the students believed that stress contributes to increased asthma severity. A review article about the role of psychological stress in asthma showed that 15-30% of patients responded with increased bronchoconstriction in stressful situations. The difference in the findings could be because stress is a subjective variable and individuals differ in their ability to react to stressful conditions. [25]

Almost 47 percent of the asthmatics reported worsening of asthma on exposure to pets this relationship is higher as compared to a similar study conducted on school children of Islamabad in which almost half (23%) of asthmatic children reported having pets at home.[7] The difference between the results could be due to the fact that we took a smaller sample of 300 students which might not be fully representative of the student population.

Allergic diseases also appear to play an important role in prevalence of asthma. In our research almost 65% of asthmatics reported having allergies. This association is much higher than a similar study conducted at Allergy Centre National Institute of Health which showed that 20% of asthmatics have allergies.[5] The difference may be due to greater air pollution in Lahore.

Nearly 40% of the students said that they did not take any asthmatic treatment in the form of inhalers, steroids or oral tablets, however it is not clear that whether this is due to improved asthma control or carelessness on part of the students, But since 97 percent of the patients consulted their physicians for asthma in the last 12 months so it is likely that it could be due to lack of seriousness regarding appropriate control of asthma. This might in itself have led to increased emergency hospital visits which were reported to be 44% further signifying poor control of asthma.

Our results are based on a survey in a major medical school in Lahore and are not necessarily representative either of the of the student population or of the entire country. The asthmatic status of subjects was assessed only by means of self- report, potentially rendering our results less reliable. This study may not be necessarily representative of young adults of the general population or students of other non medical colleges since medical students have greater awareness about asthma as it is an integral part of their curriculum, being taught as a part of both basic and clinical sciences and students also have easier access to quality health care facilities as they visit the attached teaching hospitals regularly.

CONCLUSION:

The conclusion of our study is:

The frequency of asthma(11.3%) corresponds with the global frequency. The number of students who have asthma and smoke is much lower than those found in other studies. Obesity does not seem to be an important associated factor since none of the asthmatics is obese. Although medical students have a good awareness about asthma however control of asthma is poor. Family history is an important determinant of asthma frequency in medical students.

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